THE BUILDER

INCORPORATING "ARCHITECTURE" AND "THE BRITISH ARCHITECT"

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THE HOUSE OF COMMONS

OUR article in last week's issue summarised the Select Committee's report on the reconstruction of the House of Commons and indicated the interpretation of the decisions arrived at by the selected architects, Sir Giles Gilbert Scott and Mr. Adrian Gilbert Scott. The architectural treatment adopted expresses most admirably the view taken that, while it should be in sympathy with the rest of Barry's building, it might, by a judicious simplification of some of the over-ornate Gothic detail, give a broader and more dignified effect as a whole. This could be appreciated in comparing the illustrations we gave of the House before its destruction and the model for the new one.

The discussions in the Committee elicited that the terms of reference had been somewhat too narrow, limiting the scope of their proposals too closely to the parts of the buildings actually destroyed, whereas replanning might profitably go somewhat beyond these, but revision was not demanded as it appeared practicable to deal with the main elements of the problem, and in view of the fact that a Joint Committee of both Houses was appointed to deal with the general plan. The main features are, the revisions in seating accommodation, which come under three principal heads—Members of the House, Press Reporters and Visiting "Strangers"; in all these cases a great deal of consideration was given to possible increases and only in the first of them was no change ultimately decided on.

For the other two, greatly improved accommodation is secured by extending the end galleries, setting back the "grilles," so that the House is lengthened at this level. Visibility is also improved by a slightly steeper inclination of the ramps. The Press at the north end behind the Speaker's chair are given 161 seats and a proportionate increase in the ancillary accommodation. The Strangers, mainly in the south gallery, receive 326 seats, while in the side galleries the Members retain the 91 seats they previously held.

Reverting to the crucial question of the seating for Members on the floor of the House, it seems, to say the least of it, that the decision to make no increase is remarkable. While it was generally accepted that it was undesirable to lengthen the chamber, a slight increase in the width was regarded as reasonable both by the Speaker, the Right Hon. Douglas Clifton Brown, who said that if the side galleries were also set back he saw no objection, and Major James Milner, the Chairman of Ways and Means, who was strongly of opinion that the House should be rather larger than it was. The question of enlargement was put to Mr. Adrian G. Scott, who replied that there was no structural difficulty as the foundations and site would take a new building of another form. On the question of widening the Chamber the Committee were very nearly equally divided, but eventually they "played for safety" and decided to adhere to the precise original dimensions.

In view of the fact that there are 615 M.P.s, with the possibility that this number may be increased in the future to about 670, it seems at first sight somewhat absurd that only 346 seats should be provided on the floor of the House and only about 300 from which members can speak, owing to the restriction on those outside the Bar. Those who support this apparent anomaly use the argument that during by far the larger proportion of the time when Parliament is sitting this accommodation is found ample and the reduced scale facilitates discussion. This is claimed to outweigh the occasional serious inconvenience when the House is overcrowded. Notwithstanding this claim, it does appear that the disproportion is too great and that the present opportunity should not have been missed to enlarge the accommodation to some extent if it could be done without drastically expanding the area of the floor. An increase of the width of the building from 46 to 58 feet would enable about 100 more members to be accommodated without detriment to the intimate character of the plan, and the vision of speakers from the galleries would also be improved. This need not reduce the area of the division lobbies, as the three central bays of these could also be extended outwards without unduly diminishing the general light and air in the external courts.

With this expansion there yet remains a device by which the floor of the House could be reduced to its present dimensions when preferred. Immediately behind the fifth tier of benches the panelling could be in the form of shutters, electrically operated to rise from the floor level to the underside of the galleries; when these were up the House would have exactly its present appearance except that the overhang of the side galleries would be less; when down, the two additional tiers on each side would be opened up, giving the 100 additional seats; the operation would take only a minute or so.

As an indication of the popular expectation that the seating for members would be increased, it was erroneously announced in more than one quarter that 171 additional seats were to be provided; how the mistake arose is not explicable, but it struck no one as an unreasonable assumption. We ourselves feel most strongly that this element in the plan demands reconsideration, it being unworthy of the dignity of Parliament that the House should be so inadequate to the needs of its members when an important occasion brings the whole body together.

NOTES AND NEWS

Future of City Churches.

An interim report of the Bishop of London's Commission on the City Churches recommends that all those not destroyed beyond hope of restoration shall be preserved. Other proposals made in the report are for amalgamation of some of the City parishes, the erection of three institutes for social work on the sites of the destroyed churches, and the putting of tithes in the City on a uniform and equitable footing. The report is published by the Press and Publications Board of the Church Assembly, price 1s.

Durham Power Station Inquiry.

The local inquiries ordered by the Minister of Town and Country Planning and the Electricity Commissioners into the proposal of the North-Eastern Electricity Supply Company to erect a new generating station at Kepier, near Durham, are to be held jointly. They will open at the Shire Hall, Durham, on December 5. The Minister of Town and Country Planning has appointed Mr. G. L. Pepler, C.B., F.S.I., P.P.T.P.I., and the Electricity Commissioners have appointed Sir Cyril Hurcomb, K.C.B., K.B.E., and Mr. C. G. Morley New to hold these inquiries.

An A.A. Exhibition of Sketches.

The sketches at the exhibition which is now open at the A.A., have been completed by members since the outbreak of war. It is not to be expected that the customary standard of work can be maintained with so many members either in the Armed Forces or engaged on other war work. The exhibition is helped by the exhibits of older members whose work is well known—*i.e.*, P. D. Hepworth, Cyril Farey, Knapp-Fisher, E. B. Musman, Seymour Lindsey, Julian Leathart, P. J. Westwood, and others. A certain number of the works on view lack sincerity and perspective value and are indefinite and unpleasing. Some others have the appearance of having been inspired by the recent exhibition of children's work. Knowledge might be gained by those who need it by a visit to the exhibition at the R.A. of work by members of the Royal Institute of Painters in Water Colour. The A.A. is to be congratulated on keeping these exhibitions going in such difficult times.

Maintenance Scholarships in Architecture.

The Architects' Registration Council of the United Kingdom offer for award in June, 1945, certain maintenance scholarships in architecture. The scholarships will consist of a grant for the payment, in whole or in part, of the school fees and necessary subscriptions, instruments, books, etc., and, when necessary, a maintenance allowance not to exceed as a rule £100 a year. The scholarships will be renewable from year to year until the student has finished his or her school training. They will be available for students of British nationality who could not otherwise afford such training to enable them to attend architectural schools approved by the Council. The scholarships will be available both for students who have already begun their training and for students wishing to begin their training. Scholarships will not be granted to students who will be less than 17 years of age on October 1, 1945. Particulars and forms of application may be obtained from the Secretary to the Board of Architectural Education, Architects' Registration Council of the United Kingdom, 68, Portland-place, London, W.1. Copies of previous years' examination papers may be obtained on payment of 6d. The closing date for the receipt of applications, duly completed, is February 1 next.

The Birkenhead Plan.

There will be a meeting of the Westminster branch of the Association of Building Technicians at 6.30 p.m. on Thursday, December 7, at Westminster Hospital Medical School, Horseferry-road, S.W.1, when Sir Charles Reilly will give a talk on his Birkenhead plan. The nominal charge is 6d. to members, 1s. to non-members. The lecture will be illustrated by lantern slides.

Care and Maintenance of Closed Brickworks.

The Minister of Works is prepared to consider applications for contributions in respect of care and maintenance expenditure from brickmaking works which have ceased production since the outbreak of war and are not at present in receipt of such contributions. Further particulars can be obtained from the Deputy Director of Bricks, Ministry of Works, Lambeth Bridge House, London, S.E.1.

Civil Engineering Work Report.

The price of the Institution of Civil Engineers' Report, No. VI, on "The Organisation of Civil Engineering Work," reviewed in our last issue, is 2s. 6d., not 2s. 2d., as stated.

Ministry of Works' Assistants.

The M.O.W. Association of Architectural, Surveying and Civil Engineering Assistants announces a change of title to "The M.O.W. Association of Professional Assistants." As a constituent association of the Institution of Professional Civil Servants, the Association will continue to promote the interests of the Ministry staff of drawing office grades in these professions, especially in regard to the problems which will arise on the conclusion of hostilities. Inquiries regarding membership will be welcomed from members of the staff serving with H.M. Forces, and should be addressed to the Hon. Secretary, A.P.A., Ministry of Works, Room 631, Abell House, John Islip Street, London, S.W.1.

Professional Announcement.

Mr. G. H. G. Marriott, A.R.I.B.A., of the Public Works Department, Freetown, Sierra Leone, would be glad to receive trade catalogues on all matters relating to architectural and civil engineering materials.

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COMING EVENTS

Sunday, November 19.

London Women's Parliament. Discussion on "The Housing Bill," introduced by Prof. Sir Charles Reilly, O.B.E. Bedford Theatre, Camden High-street, N.W.1. 10.15 a.m.

Tuesday, November 21.

Housing Centre. Dr. Innes Pearse on "Educating for Householding—6: The Family." 13, Suffolk-street, S.W.1. 1.15 p.m. (Buffet lunch, 12.45 p.m.)

University of London. Second University Extension Lecture, on "Principles of Organisation and Management as Applied to the Building Industry," by Mr. T. P. Bennett, C.B.E., F.R.I.B.A. London School of Hygiene. 5.30 p.m. (Details given in our issue for October 27.)

Thursday, November 23.

A.P.R.R. Talk by Mr. M. Frenkel on "Bethnal Green." 34, Gordon-square, W.C.1. 6 p.m.

Friday, November 24.

Institution of Sanitary Engineers. Mr. J. H. T. Griffiths on "Behaviour and Treatment of Iron-bearing Waters." Caxton Hall, S.W.1. 2.30 p.m.

Royal Institution. Dr. E. F. Armstrong on "The Gas Industry: Yesterday and To-morrow." 21, Albemarle-street, W.1. 5 p.m. (Tea, 4.30 p.m.)

Institution of Mechanical Engineers. Mr. C. A. Gladman on "Drawing Office Practice in Relation to Interchangeable Components." Storey's Gate, S.W.1. 5.30 p.m.

COMPETITION NEWS

SEMI-DETACHED TIMBER HOUSES.

The award is now made in the competition organised by the Timber Development Association, Ltd., for designs for a pair of semi-detached timber houses :—

1st (£250) : Mr. John P. Tingay, A.R.I.B.A., Eastcote, Middlesex.

2nd (£100) : Mr. Ralph Erskine, A.R.I.B.A., A.M.T.P.I., resident in Sweden.

3rd (£50) : Miss June Bosanquet, A.R.I.B.A., c/o Architectural Association, W.C.1.

There were 167 entries. The assessors were Messrs. C. Cowles-Voysey, F.R.I.B.A., Brian O'Rorke, M.A., F.R.I.B.A., Frederick MacManus, F.R.I.B.A., Bryan Latham and G. W. Grosvenor. The winning designs (of which models and perspectives are being prepared) will be exhibited at the Cooling Galleries, Bond-street, W.1, for two weeks from January 8, and then in the provinces.

Proposed Competition for Crystal Palace.

A report to the effect that prizes worth £5,000 are to be offered to British architects for a new Crystal Palace design, and that the Trustees and the Council for the Encouragement of Music and the Arts are the joint organisers of the competition, is, we are informed, premature. Conditions for a competition are, in fact, being drawn up, but will not be ready for some weeks.

From *The Builder* of 1844.

Saturday, November 16, 1844. *Price* 3*d.*

Supposed Oldest House in the Metropolis. Till within the last ten days a very ancient house stood in Hoxton Old Town, which was believed to have been nearly five hundred years old, but which is now pulled down. The Parliamentary Survey, No. 78, as reported in Sir H. Ellis's "History of Shoreditch" . . . states that about this spot, during the interregnum, a house was in the possession of Charles Stuart, sometime King of England, in 1653, which was valued at 4*l* per annum. *** Hoxton, which from the 14th to 17th century was a resort of the nobility, has a traditional connection with Charles II, after whom Charles-square, a still delightful set of buildings running between Pitfield-street and the City-road, was named.

AN IMPERIAL ARCHITECT

SIR HERBERT BAKER'S AUTOBIOGRAPHY

SIR HERBERT BAKER has written an autobiography* which radiates a remarkable personality and makes pleasurable reading for anyone interested in that rich period of personal architecture which began with Shaw and ended—when? To the writer there was a brief interval of contact, slight though it was, with the Delhi scheme in the early days of the last war to add spice to the reading.

Baker, as he appeared then to a very obscure and subordinate assistant, was a disturbing person. At that time, as the working drawings for the Secretariat Buildings were being rushed through in preparation for a migration to India, it was obvious that, to the master, the initial "fun" of design had ended and that the practical routine of the moment was irksome. He was obviously itching to get across and build. But Baker, the author of this book, shows a delightful modesty which is obviously not assumed for the occasion. His close but difficult relationship with Lutyens is dealt with generously, and he makes no attempt to belittle the precedence which most would give to his great colleague. They shared the common experiences of pupilage with Ernest George, from whose office so many sound architects, in the fullest meaning of the word, came to give warmth and feeling to an age that may not yet have received its just due. Baker does not hesitate to rank Lutyens with Wren, and who has a better point of vantage from which to make this bold appraisement of a close contemporary?

Baker himself, however, is quite unique in experience and achievement. It is natural and right to associate him with the architectural development of South Africa, where his close friend and patron, Cecil Rhodes, gave him the widest opportunities. In the same way, Ernest George and Lutyens are thought of as London men, but whereas such an association is complete and satisfying in these latter cases, Baker's work has spread, not merely by hearsay but by personal progress, over large tracts of the globe. He was, in fact, already mature in his architectural outlook when his greatest opportunities faced him in South Africa, and though these works added richness to his vocabulary, he went there as a London man, and when he returned to the homeland it was not as a stranger bringing exotic goods, but as one returning home. Great works like the Bank of England extension fit the new City of London as by nature bound, and none who lacked the classic training of his generation could have handled the fine old nucleus of the later Renaissance in England so boldly and yet so tenderly.

All these works seem so recent—indeed, the fresh tone of the Portland stone on them has hardly yet felt the dark etching of London smoke—that it is almost a shock to find the author writing an epilogue as an old man, preoccupied with retirement and content to stand back as an elder counsellor. But the wisdom of his philosophy shows him to be eminently eligible for such a rôle, and we do, indeed, need such counsel in times when the pressure of great need so encourages a superficial conclusion. Baker shows himself to be in love with his England, its inconsistent charms, and the grandeur behind it all. The architecture worthy to stand in such a setting cannot be fitted into some trite prescription, for the spirit of it is incalculable. To see it all flattened out into a dead standard of logical uniformity would pain him, and all who think with him, acutely.

Surely the chief lesson of this autobiography is its ample evidence that the English Renaissance contains a rich and varied vocabulary, still alive and vital, and denying neither the enrichment of new phrase nor the impress of fresh individualities.

But we run the risk of stamping this book as one obsessed with moralising, which would be enough to scare away the young of any generation. It makes no such pretence, and its lessons come entirely by personal implication. To those who would be entertained rather than taught, there is a wealth of interest to be found through the very breadth of the author's experiences, rarely sought, but arriving his way as few could claim. How many are there living to-day who could claim personal knowledge of such an array of celebrities as Rhodes, Smuts, Kipling, Lawrence, Buchan and Kerr, as well as the usual company of colleagues and politicians which the eminent architect is bound to meet? Baker reveals, incidentally, that Lawrence wrote "The Seven Pillars of Wisdom" in an attic of his house, 14, Barton-street, Westminster.

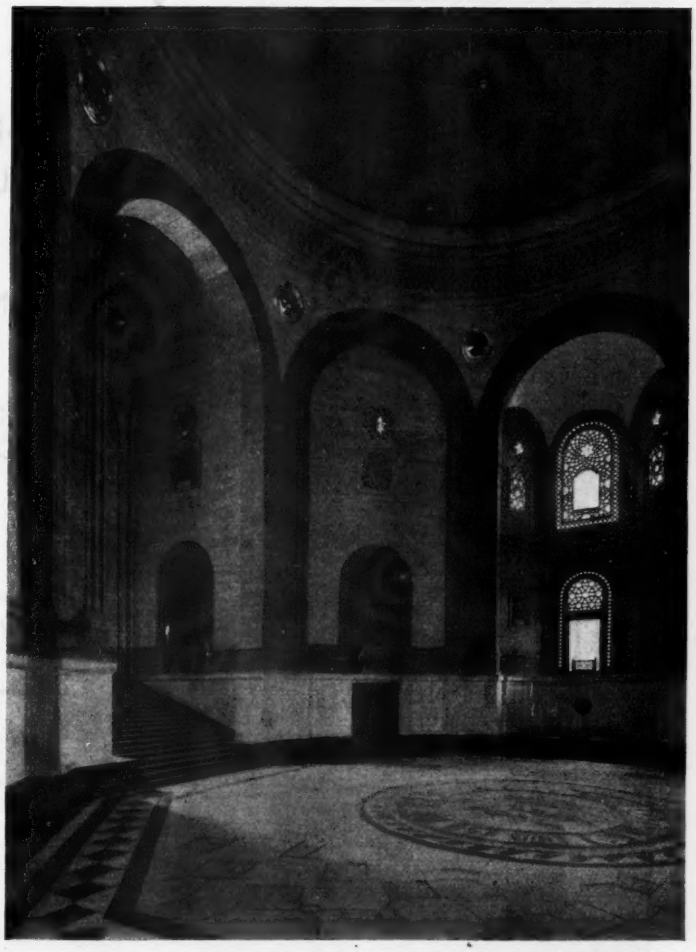
The range of Baker's works is well illustrated by photograph and perspective, with William Walcot as the leading artist. Walcot evidently found Baker's style of architecture and the setting of his works much to his taste, and Baker must also feel happy to see his architecture portrayed with such warm feeling. Whether they stand in the sombre London atmosphere, the kindly sun of the South, or the glare of an Indian day, these works all display a sense of artistry and joyfulness. Few can have had such an album from which to draw. Among them a finely composed photograph of the Union buildings, displaying the sweeping colonnade seen from the deeper shadows of the opposite sweep, is particularly pleasing, while the gracious proportions of the South African Memorial on the Somme show a fine restraint and sense of scale.

Like Giles Scott, Baker found that he could handle the Gothic theme with pleasure when the proprieties of religious tradition called for it, and the chancel of Capetown Cathedral, which is illustrated by a fine photograph, is magnificent in its simple lines.

Not least in interest among the wealth of illustrations are the views of Owletts at Cobham, where Baker was born and lives. To start in such surroundings, and to know the comfort and dignity which the lesser country houses of England can offer their inmates, may have contributed much to the urge for architecture which gave us one of its masters.

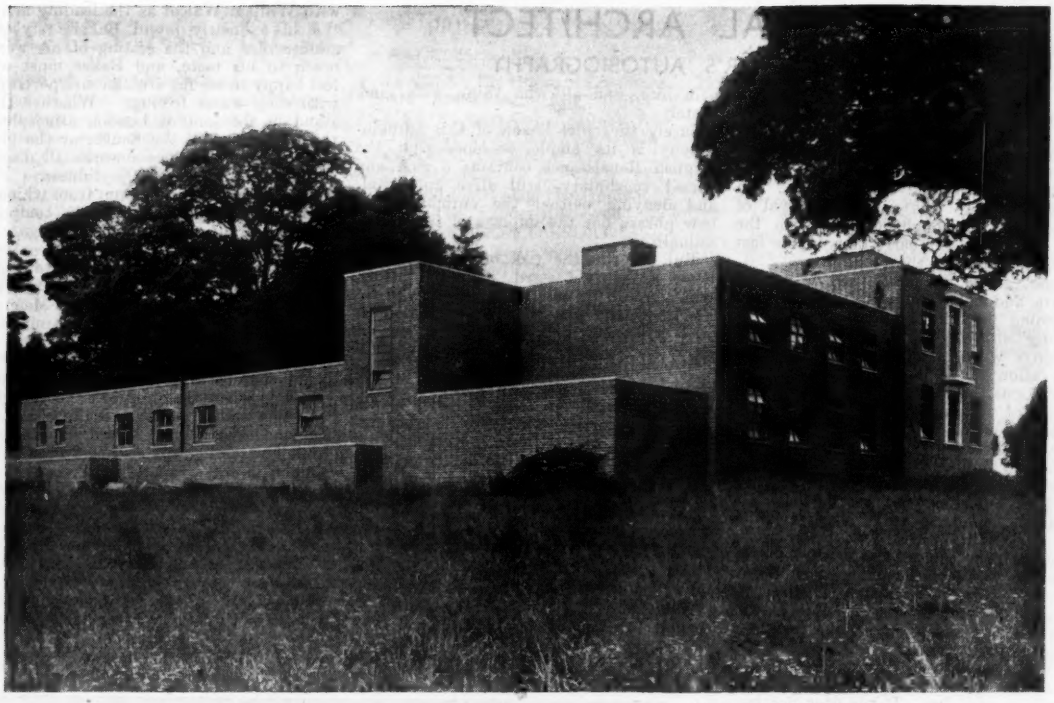
G. MAXWELL AYLWIN.

* "Architecture and Personalities," by Sir Herbert Baker. *Country Life*. Price £2 2s. net.



From "Architecture and Personalities."

NEW DELHI: Entrance Hall under Dome, North Block, Secretariat Building.



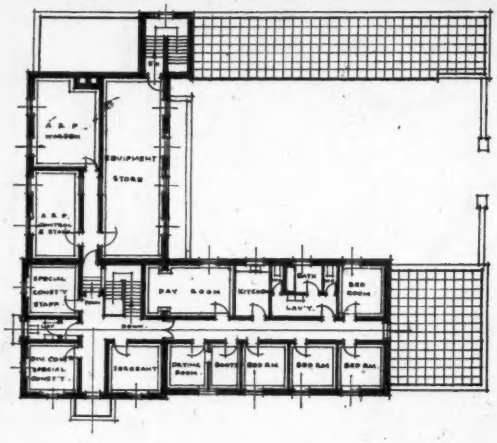
VIEW FROM THE EAST.

DIVISIONAL POLICE HEADQUARTERS, TOTNES

FOR THE

DEVON STANDING JOINT COMMITTEE

H. V. DE COURCY HAGUE, F.R.I.B.A.,
COUNTY ARCHITECT



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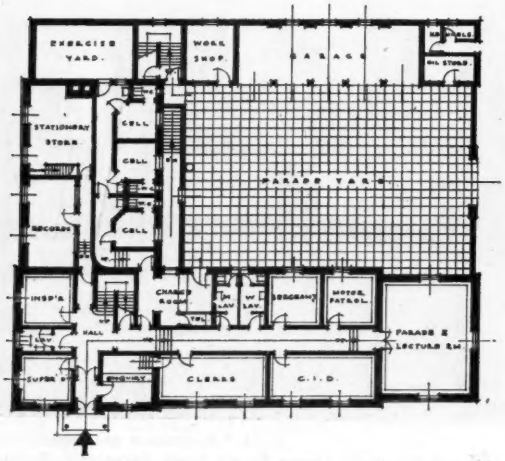

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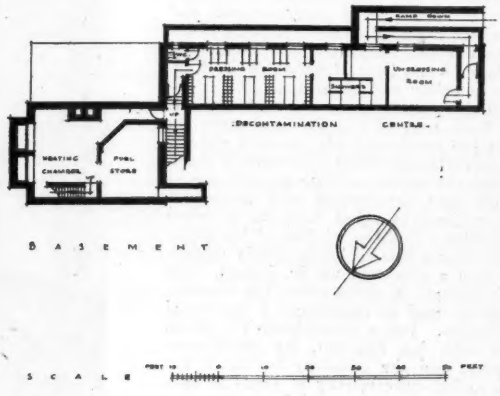


DIVISIONAL POLICE HEADQUARTERS, TOTNES, DEVON

BUILDING OPERATIONS WERE COMMENCED ON THESE Divisional Police Headquarters at Totnes, Devon, in 1941. The building was opened in December last by Sir John Daw, chairman of Devon Standing Joint Committee.

The detailed accommodation provided is as follows:—

Basement: Decontamination unit; heating chamber.

Ground Floor: Offices for inspector and sergeant; inquiry and clerks, general offices, motor patrol section; C.I. department; charge room and cells for two males and one female with exercise yard; garage with workshop.

First Floor: Superintendent's office; office for Divisional Commissioner of Special Constabulary; living quarters for station sergeant; civil defence department.

The building is faced with sand-faced bricks with cast-stone dressings sparingly used. Floors and flats are fire-resisting throughout.

The general contractors were Messrs. J. W. C. Scoble & Son, Ltd., of Kingsbridge. The following firms were also associated with the work:—

Heating installation, G. N. Haden & Sons, Ltd., Torquay; electric lighting, Frank Curtis (Electrical), Ltd., Totnes; cast stone, the Wharf Lane Concrete Co., Ltd., Ilminster; fire-resisting floors and flats, South Western Builders, Ltd., Exeter; and tar paving, J. Coles & Son, Ltd., Bristol.

DETAIL OF PRINCIPAL ENTRANCE.

The buildings were designed by Mr. H. V. de Courcy Hague, F.R.I.B.A., Devon County Architect.

*** We shall publish a further recent example of Mr. Hague's police work, namely that at Torquay in an early issue.—ED.

GENERAL VIEW FROM THE NORTH.

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Technical Information for Demobilised Architects.

To the Editor of *The Builder*

Sir,—Architects serving with the Forces have expressed their concern about the many difficulties likely to be encountered when they resume their professional activities. Among these difficulties is that of acquiring as quickly as possible all available information about materials, equipment and services at present available, or likely to become available, as soon as circumstances permit.

Most pre-war catalogues will be out of date—if not already disposed of as salvage—and the process of building up an adequate library of trade catalogues and publications is likely to be long and tedious.

Much time and trouble will be saved if manufacturers are prepared to circulate their publications to architects as and when they return to their professional work, but a period must of necessity elapse before the R.I.B.A. Kalendar or other publications can be brought up to date with the names and addresses of those who have been serving overseas or elsewhere.

I shall, therefore, be glad to hear from those firms who would undertake to help demobilised architects in this way and, if the response so warrants, to arrange for the publication, either weekly or monthly, of a list of the names and addresses of members desiring this service immediately the Institute is notified of their return from the Forces.

Two other matters are referred to in letters from serving members—viz., the desirability of some form of standardisation in the preparation of catalogues and information sheets to facilitate filing, and the greater value of drawing office data, fixing details and other technical information by comparison with the more usual photographs of executed work.

The first of these matters is at present under consideration by the British Standards Institution at the request of the R.I.B.A.; the second is recommended to the serious consideration of manufacturers.

Thos. E. Scott,
Chairman, R.I.B.A. Demobilisation Committee.

66, Portland-place, W.1.

Ministry of Works Standard Factory.

To the Editor of *The Builder*.

Sir,—Architects must have examined with interest the plans recently published in *The Builder* of the Ministry's Standard Factory, and which herald the entry of the Government into the field of the factory estate developer and speculator.

The form of construction shown employing lattice girders to provide an uninterrupted floor space of 100 ft. is one appropriate where internal stanchions would be obstructive to the layout of plant or processes carried on within the factory. In my experience such cases are the great exception. Such a design is only warranted where especially called for, and, in view of the additional cost, cannot be considered but as an extravagance when applied to a standard design, especially where the standard design is expressly stated to be for the manufacture of newer and smaller types of industrial products.

The extra cost involved by the clear span is almost entirely attributable to the heavier and more complicated steelwork. Let us consider the case in this respect. Taking a normal factory construction with internal stanchions at 24-ft. centres and 30-ft. span north-light trusses supported on valley beams, the weight of the steelwork including steel purlins would be approximately 4.50 tons per 1,000 ft. sup. of floor space. For a factory of 50,000 ft. sup., the total weight of steelwork would therefore be 225 tons.

To provide 100 ft. clear span, employing lattice girders, the weight of steel required per 1,000 ft. sup. would be approximately 7.50 tons, giving a total weight for the same factory of 375 tons.

This means an extra weight of steel amounting to 150 tons. Taking the price of steelwork erected complete at £35 per ton, this means an extra cost of some £5,250 on each factory.

To a practical architect there would have to be a very good reason before he could commit his client to this extra expenditure. Can it be that such considerations no longer operate when the client is, in the long run, the taxpayer?

These factories are stated to be under construction in "considerable numbers." It appears justifiable to ask, How many, and why?

R. Blyth Winter, L.R.I.B.A.

Chingford, Essex.

Builders' Organisations.

To the Editor of *The Builder*.

Sir,—We have read with interest Mr. G. H. A. Hughes's letter in last week's *Builder* with regard to the L.M.B.A., and would point out that if, in common with most other small jobbing builders, we had thought that the L.M.B.A. did not represent us, it was certainly not the fault of the small builders, but that of the past management of the L.M.B.A.

Indeed, until the formation some four years ago of the Federation of Master Builders, to which so many of these small builders have flocked, we had heard very little of the activities of the L.M.B.A., and when we did we were certainly under the impression that they in no way represented us.

Mr. Hughes states that some 15 per cent. of the membership of the L.M.B.A. are in the category of the small man with four or five men. If he says so, of course, that is the case, but are these 15 per cent. in any way represented on the various committees? Do not they, too, suffer under the usual non-recognition of the smaller firms? Is it not a fact when elections are announced that names of certain well-known personalities are put forward, and these names, being known nationally, are, of course, accepted by the majority?

What chance has the practically unknown name of a certainly unknown and unrecognised small firm of being put forward as representative of these small jobbing builders? This defect in the democratic system of election is not, of course, peculiar alone to the L.M.B.A.; it applies equally to the F.M.B., with its far greater percentage of small builders.

In view of this difficulty, and wishing to help with our criticisms, may we suggest, first, that the two associations amalgamate, as there is certainly no need for two associations doing the same work in the building industry; but that as soon as the amalgamation takes place, a subcommittee be elected formed only of members of these smaller builders, and that they then be invited to form their own committees to discuss their own problems, make their own suggestions, and then report back to the parent body, which should then undertake carefully to consider these reports and aid the smaller men in their various needs, which are not always those of the greater nationally known firms.

At the same time, the writer would be pleased to attend an Area meeting of the L.M.B.A. to see for himself the influence these small builders have on the various decisions arrived at and how much their needs are looked after, more particularly what is being done for them when the present "cost-plus" system eventually disappears and when they will be in a position to use their knowledge and experience and take over from these many mushroom firms who have been able to grow up too fast on the country's difficulties.

S. Yudkin,
p.p. Efficiency Builders, Ltd.

London, N.W.6.

Licensing and Small Repairs.

To the Editor of *The Builder*.

Sir,—I require a new washer on the ball-valve of my water-storage tank.

Having spent more than £10 during the past twelve months on building repairs I must perforce apply for a licence. I fill in Form 1136, in which I am asked to furnish a general history of the circumstances (including such particulars as the value of the property for Schedule A and fire-insurance purposes) and justification for the work. The completed form is sent to my local council, and I await hopefully and necessarily patiently for permission to repair my ball-valve, which, my experience teaches me, will not arrive for a few weeks.

I am tempted to proceed with the work without permission, but my conscience cannot reconcile with the facts the extenuating condition that "the work is necessary in circumstances of such emergency as to make it impossible to obtain a licence beforehand."

In the meantime my overflow pipe continues to drip.

Selwyn B. Porteous.

Dulwich, S.E.22.

Lath and Plastering.

To the Editor of *The Builder*.

Sir,—An advertisement in a recent issue of *The Builder* states: "Just another lath and plaster ceiling down." "Lath and Plaster is unstable." "Essex Board ceilings stand as long as the building because it has stood the test of twenty-three years."

Following Joad's dictum, I say, "It depends on what is meant by a building." There are good buildings and there are not so good buildings. When work is carried out with correct procedure in relation to both material and workmanship, a lath and plaster ceiling is not unstable. On the contrary, most of the finest buildings throughout the world, some of which are centuries old, incorporate the basic principles of the lath and plaster ceiling or stud partition with its lath and plaster finish. This is surely proof of the stability of this type of ceiling.

I earnestly hope that those who will be responsible for post-war building, and by this I include even the humblest cottage, will see to it that internal finishings will be given that measure of consideration which their importance demands.

R. P. Bannister, President,
Federation of Plastering Contractors.

St. Stephen's House, S.W.1.

⁂ A letter in somewhat similar terms to the above has also been received from the London Master Plasterers' Association. Other correspondence is unavoidably held over.—Ed.]

HOUSES IN "DRI-BUILT" CONSTRUCTION

A SYSTEM OF HOUSE CONSTRUCTION WHICH he has termed "Dri-Built" has been devised by Mr. J. L. Spooner, of Spooner's (Contractors), Severn-street, Hull. The system relies upon wall units, 4 ft. high, fitted between 3¾-in. square posts. The units are built up of a double timber framework faced externally and internally with resin-bonded plywood. Floors are of similar material, as are roofs. The latter may be treated with various materials for weather-proofing. A feature of the design is that a brick veneer may be included at the time of erection or added later when labour would be available.

The following notes are supplied by the inventor :—

"Dri-Built" construction has been developed to utilise factory production methods to meet at a reasonable cost the needs of post-war housing. By a standardisation which permits of flexibility of treatment and by the use of factory production methods, proved throughout the war on work of highest importance, it is certain that costs of structure can be reduced and those of fitting and equipping cut to produce a value in housing such as was effected by mass production in the automobile industry.

Briefly, the system is as follows :—

FOUNDATIONS.—Foundations may be of concrete block, mass concrete, or brick, as required to produce a level sill-seating at about 9 in. (min.) above ground level. Holding-down bolts will be bedded in this foundation walling.

FLOORS.—Floors will consist of 4 ft. wide units of variable length composed of timber joists with a stressed, resin-bonded plywood skin. Tie-rods will be used laterally to give complete stiffness. The ceiling of first-floor panels will be of a material chosen for sound absorption.

WALLS (EXTERNAL).—The walls will consist of 4 ft. high units of any reasonable length fitted between wood sills, rails and heads. The units consist of a double timber framework faced externally with ½-in. and internally with ¼-in. thick resin-bonded plywood glued to the framework. 3¾ in. square posts at angles, at partition junctions, and in the case of two-storey buildings at windows or at approximately 4-ft. centres are used to stiffen the structure. These, with the middle rail, may be left showing, or an internal skin applied on stiffeners which will give a flat internal face. This face may be any suitable wall-board, plywood, plaster-board panelling or metal lathing and plaster.

INTERNAL.—Partitions will be similar to the external wall units, but with both sides ¼-in. thick plywood. The weight-bearing capacity of these partition slabs is very considerable.

WINDOWS.—Window frames will be of timber normally 4 ft. high fitted flush with the wall unit between the middle rail and head, the joint outside being covered with a fillet working flush with the projection of the rail. Structural wall posts will be made to coincide with mullions where very wide windows are required. In living rooms the sill may be dropped below the middle rail to any height above floor level.

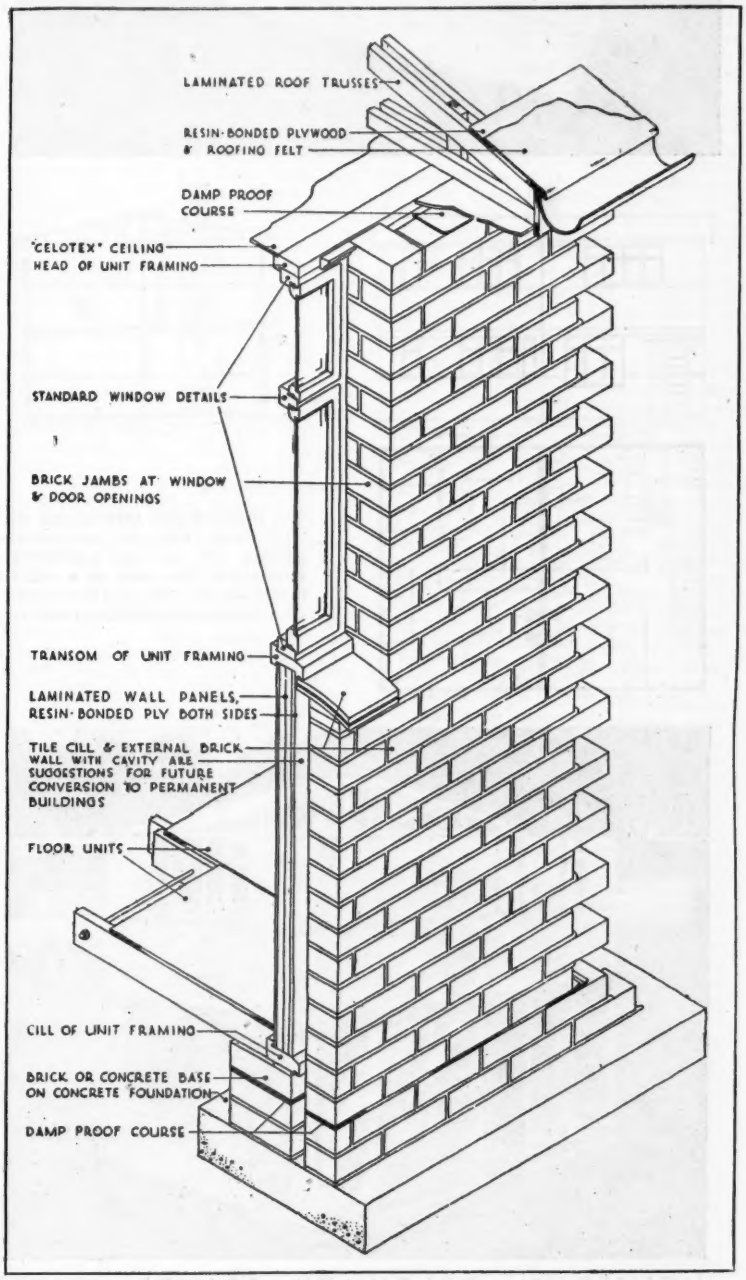
DOORS.—Doors may be flush panelled, glazed or panelled, and are fixed like the windows, being previously hung on frames or linings.

ROOF.—Roof units of light timber, the roof being of low pitch with plywood outer surface and ceiling. They will be normally 4 ft. in width for varying spans and with special gable-end units. The outer surface may be treated in various ways and with various materials for weather-proofing.

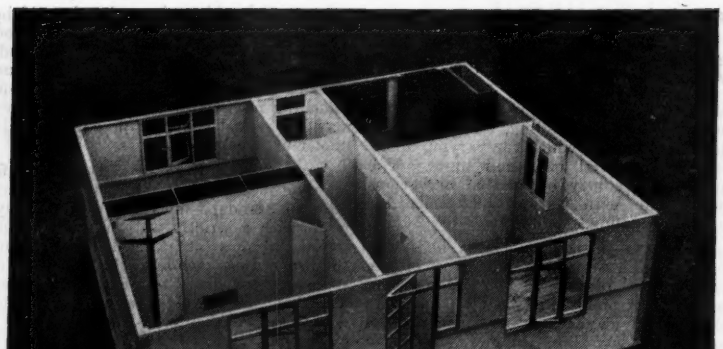
FINISHES.—The exterior may be spray-painted with a plastic paint direct on the resin-bonded plywood. The windows and window surrounds will be oil painted in the normal manner. Other surfaces such as weather-boarding, shingles, shiplap in cedar or Columbian pine painted could be applied if required. The internal plywood faces may be painted direct or papered. Hardwood faced ply could be used and polished to give a high-quality finish. Panelling might also be used. The floors may be treated similarly or covered with linoleum or carpet.

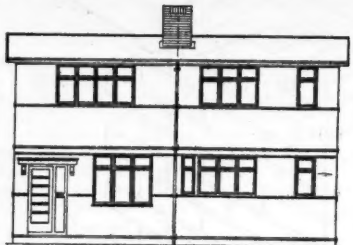
ADVANTAGES.—Exterior Douglas fir plywood combines the structural superiority of standard moisture-resistance plywood with a strictly waterproof bond between the plies (guaranteed by the manufacturer) that renders it suitable for permanent exposure to weather or water. This bond of synthetic resin, hot pressed, is similar to bakelite in its action.

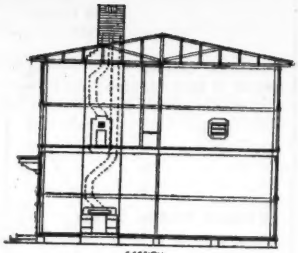
Glueing plywood to the framing is

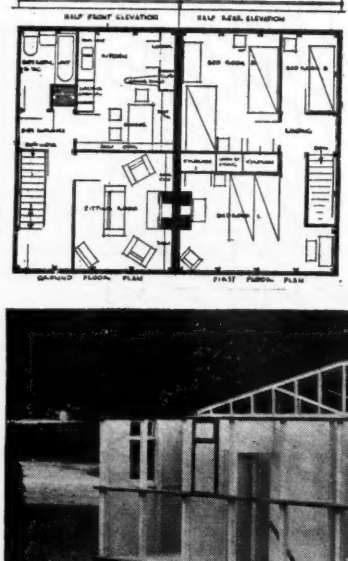

LAMINATED ROOF TRUSSES
RESIN-BONDED PLYWOOD & ROOFING FELT
DAMP PROOF COURSE
"CELOTEX" CEILING
HEAD OF UNIT FRAMING
STANDARD WINDOW DETAILS
BRICK JAMBS AT WINDOW & DOOR OPENINGS
TRANSOM OF UNIT FRAMING
LAMINATED WALL PANELS, RESIN-BONDED PLY BOTH SIDES
TILE CILL & EXTERNAL BRICK WALL WITH CAVITY ARE SUGGESTIONS FOR FUTURE CONVERSION TO PERMANENT BUILDINGS
FLOOR UNITS
CILL OF UNIT FRAMING
BRICK OR CONCRETE BASE ON CONCRETE FOUNDATION
DAMP PROOF COURSE

ISOMETRIC SECTION SHOWING CONSTRUCTION, WITH FUTURE EXTERNAL BRICK VENEER.

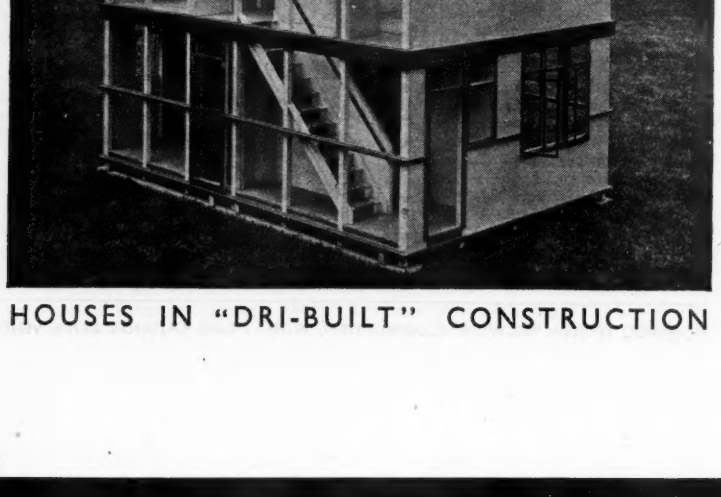








THE PHOTOGRAPHS REPRODUCED ON THIS PAGE ARE OF HALF-SCALE MODELS OF (A) A 2-BEDROOM BUNGALOW (TOP) AND (B) A 3-BEDROOM HOUSE. THE DRAWINGS ARE OF A PAIR OF SEMI-DETACHED HOUSES.



HOUSES IN "DRI-BUILT" CONSTRUCTION

an effective technique, because it creates a "stressed skin" panel, which has proved itself in aeroplane construction. Such plywood units possess remarkable strength and stiffness yet are so light as to be easily handled when surface areas are large. The buildings are claimed by the manufacturers to be airtight, warm and comfortable, and draughts are eliminated with heating costs kept at a low level. Plywood walls have excellent acoustical properties.

SITES FOR HOUSING

STATEMENT BY MINISTER OF T. AND C.P.

SPEAKING recently at a conference of women members of Local Government Authorities, organised by the National Women Citizens' Association, MR. W. S. MORRISON, Minister of Town and Country Planning, said the Government had already announced a programme of house construction, in the form both of permanent and of emergency factory-made dwellings. The Housing (Temporary Accommodation) Act had been placed on the Statute Book to deal with the latter. The choice and acquisition of sites was a first priority of the housing programme.

"My Department and the Ministry of Health," continued the Minister, "both possess regional organisations. It is through them that we work on this matter of sites. What happens is this: a local housing authority formulates its proposals for new housing, permanent or temporary, under the Government programme. It proposes the acquisition of certain new sites, for the erection of those houses. Details of these sites are thereupon sent by the local authority to my Regional Planning Officer. It is his duty, with a minimum of delay, to 'clear' these sites; that is to say, he has to make up his mind whether or not they are well chosen from a planning point of view. Other Departments may have a vital interest in the matter. The Minister of Agriculture, for instance, is concerned that there should be no unnecessary appropriation of good agricultural land for building purposes. The Minister of War Transport is concerned about the relation of new houses to existing and future roads, and in some cases to railways and bus services. In order that the local authority may be relieved of the necessity of consulting these Departments separately in each case, the Regional Planning Officer of my Department is responsible for carrying out all necessary consultation with other Departments, and he is in a position to do this very readily through their appropriate regional officers on the spot.

Temporary Housing in London.

"Under this procedure clearance has already been given, in the manner described, to 2,500 sites in England and Wales, capable of accommodating 180,000 houses, and this figure will soon be greatly increased with the allocation of temporary houses to local authorities. The work continues at high pressure. The case of London, as might be expected, presents some special features. The Minister of Health recently asked me to help the local authorities of London and Greater London to find 5,000 acres of land suitable for the erection of temporary houses, within a distance of 15 miles of Charing Cross. We tackled the job as one of special urgency and it is now substantially complete. Rather more than the stipulated 5,000 acres have been agreed with the local authorities, and with the other Departments concerned, as suitable for temporary housing purposes in the Greater London area."

BUILDING CONTRACTS

THEIR PLACING AND MANAGEMENT

THE Central Council for Works and Buildings has submitted to the Minister of Works a report headed "The Placing and Management of Building Contracts" (Stationery Office, 1s. net). This report is divided into eight chapters and seven technical papers, which latter substantiate in detail the conclusions reached in the body of the report, and deal very fully with the subject.

This is a report of extreme importance, very clearly written and well documented, which warrants detailed examination by everyone connected with the building and contracting industry in whatever way. As in the case of most reports, there is much with which we are in agreement and some matters concerning which we do not see eye to eye with the committee. There is also one matter, with which we will deal later, in which though they clearly see and indeed state the evil, they do not propound any remedy. Despite these criticisms, the report, if officially implemented and rendered obligatory, would amount to a constitution for the whole industry.

To take the report in detail: Chapter I deals with pre-contract preparation. The committee approve in general of the existing system of placing contracts, but lay great stress on the necessity of a Time and Progress schedule, and recommend that such schedules should be incorporated in and form part of the contract document. This, as they point out, would prevent the time clause in a contract being derisory, as has been the case for many years. They also stress the importance of drawings, specifications and bills of quantities being as complete as possible before the contract is signed, and that the selection of nominated sub-contractors should also be made before this date. For the fact that this has so often not been the case they blame the building owner for wishing to rush the commencement of his building and being unable to make up his mind. With all this we are heartily in agreement. How far it will be possible to persuade the building owner as to his own interests it is difficult to say, but certainly a start has been made in the right direction, for Government Departments are themselves some of the greatest sinners in this respect.

Chapter II deals with the varying types of contract, condemns, except under very special circumstances, the cost-plus contract, and gives a qualified approval to direct labour contracts, but on the whole decides that the fixed price contract is the most satisfactory. We think that most will agree with this decision, but many will consider that the safeguards suggested in the case of direct labour contracts are not easy to enforce, notably that no member of the authority concerned should interfere with the administration of the work or the control of labour. This would be easy enough to enact but very difficult to enforce.

Chapter III deals with the selection of the general contractor. Here the committee recommend the competitive system of obtaining tenders as being the most suitable, but point out that two practices have in the past vitiated its usefulness: first, the wasteful habit of inviting numbers of firms to tender, and, second, the habit of not limiting tenders for any given contract to firms who are capable of and likely to do work of the standard required. With the first point everyone will be in agreement, but with regard to the second, except in the case of the private architect who has in the majority of cases long followed this advice, the very serious difficulty arises as to who is to decide which firms come into the desired category. This point is the more important in that the committee, while recognising that the problem hardly arises in the case of private work, recommend that public authorities should not advertise their tenders but select firms from selected lists. This suggested remedy is not one at all. For years before the war many county councils (including that of London) did in effect select firms to tender for their work in this manner, but the list had become so large that, as a survey of pre-war tender lists will show, the firms tendering were by no means of the same standard. In fact, the only type of contract in which they were was that in which the work was so large that only a few could undertake it. Neither was there any difficulty in getting on those lists, since it was practically impossible for officials, without being slanderous, to give their committees a good reason for refusing. As a result the standard of work done for such bodies dropped disastrously as compared with the pre-1914 period. If the committee suggest that those lists should be cut down, what will happen? The amount of competition in the building industry after the war will depend not so much on the enormous volume of work which will need doing as on the number of men who can be employed. If there are too many builders for such number of men there will be intensive competition. Add to this the fact that the major part of building for the first five years will probably be public work, the action proposed by the committee would in effect prevent large numbers of builders from getting any work at all. Is it supposed that those firms will acquiesce in this lightly, or, if they do, that their backers, who will frequently be local people, with local contracts at stake, will do so? Or their banks when they have overdrafts? Political action will follow as a matter of course, and with it the cry of jobbery and favouritism.

Apart from all this, what is likely to be the Treasury view? Will it be favourable? We doubt it. Their attitude to public authorities will be, "You have your architect and your clerk of works to see that the contractors work according to the specification. We want the cheapest price, and it is up to you to see that the work is done properly."

The Competitive System Doomed?

Is not the basic trouble here that the committee have not realised that the competitive system is to a large extent no longer in existence, and where it still is is doomed?

With regard to the bulk of the goods we buy as private individuals, the price is fixed by combines or trusts, and this tendency, already national, is becoming international; hence the trouble in the U.S.A. over cartels. Even in the case of the building trade the competition is mostly nominal. Wages are fixed, the price of 90 per cent. of the materials is fixed. The only competitive element is the 10 per cent. or so remaining, and the builder's profits. Actually, the system is doomed by its own nature; trade is prosperous, and eventually so many come into it that there is no profit left. The result is either bankruptcy or a trust. Unless there is control of entrance into any industry this is an inevitable law, even though it was disguised in the 19th century because markets were constantly expanding. This is no longer the case. The committee's remedy is therefore again no remedy, unless entrance to the ranks of builders can be restricted to the number that the industry can absorb.

Chapter IV deals with the selection of specialist sub-contractors. While approving generally of the usual procedure, the committee recommend that the building owner should realise, first, that in complicated buildings the architect just cannot be expected to cover the fees of consultants in engineering and special services, and, second, that the owners, through the architect, should be a third party in every contract to the sub-contractor, so that the latter may still be reimbursed even though the contractor becomes bankrupt.

We are heartily in agreement with both recommendations, but the first would, strictly speaking, appear to be a matter for the architectural professional institutions. With regard to the second, obvious difficulties might arise, such, for instance, as when a contractor has received payment on account of the sub-contractor's work and has become bankrupt without paying him. Few owners will wish to pay twice, and a provision in the contract that any such sum should be deducted from what is due to the contractor's estate might conflict with the bankruptcy laws and the right of preferential creditors. Doubtless some way out could be found in this respect. In effect, it really comes back to how the occupation of a builder is to be made a stable one, which at present it certainly is not.

Chapter V deals with bills of quantities, and provides little which is not already common practice, with one important exception. In the case of housing, the committee consider that the Standard Method is too elaborate, and they advise a simplified form with many labours not measured. In many cases this would be satisfactory, but what is to prevent a sharp contractor from claiming that those items should have been measured in accordance with the Standard Method of Measurement and the common practice of surveyors? Could such a claim be resisted? A clause might be inserted in the preamble, admittedly, stating that they were not to be so measured, but even so a loophole might remain.

Chapter VI deals with site management. In general this follows the common practice. It is recommended that the contractor should have sole responsibility under the architect for all work on the site, and in particular have full control of all nominated sub-contractors. By most existing contracts he already does in theory, but in practice, as regards control of the sub-contractor, there have usually been great difficulties in that the latter has frequently gone his own way, and the remedy is not easy to apply. It is also recommended that the clerk of works should be empowered to give day-by-day instructions on behalf of the architect. Here again in practice he has usually done so.

Chapter VII deals with personnel management, including welfare and works committees. The recommendations here have been common practice during the war and will undoubtedly have to be carried on to a very large extent in peace, but we welcome the insistence on the fact that personnel management is exceedingly difficult and requires very special qualities, such as a personal interest in human beings and a strict sense of fairness. We thoroughly endorse the view that "the selection of and education of personnel managers is one of the aspects of the building industry in which there is most room for improvement." The old slave-driving

type of foreman or agent often met has gone, since his special aptitude could in recent years no longer be exercised, but he has been replaced not infrequently by one whose special endeavour has been to earn a profit on his job by evading the specification. In fact, it is not too much to say that qualities of this sort have been valued highly, and so long as a system of cut-throat competition remains we are afraid they will be.

The last clause of this chapter deals with "information," and it pleads that the workers should be kept informed both as to the progress of the job and its national importance. This, we believe, will be of supreme importance in the years ahead. In fact, without some such arousing of the patriotic feelings of the workers the housing scheme may founder.

Chapter VIII deals with the economic background. The most important provisos here are that the Government must introduce an effective system of regulation of the volume of building and that priorities must be introduced, and that there must be strict price control over the rings which market or produce materials. These are *sine qua non*, not only for the success of the housing scheme, but for the stability of the country. Public opinion will not tolerate, after this war, as after the last, luxury building going on while housing stands still, and if the rents of houses are too high, wages and salaries will have to be raised, and the subsequent inflation may wreck our export trade on which, basically, our prosperity, indeed life, depends.

At the beginning of this article we stated that the committee pointed out an evil but propounded no remedy. In the introduction, para. 15, they state "That the worst building is done by a certain type of speculative builder. He builds houses on his own account and there is nobody to control him." This is perfectly true, but why should there not be anybody to control him? What little speculative house building that has been done of recent years in the County of London has been reasonably good because it comes under the survey of the District Surveyor. Why should not a system of inspection be extended all over the country? The present system, in so far as there is a system by which speculative houses are inspected by an official who is paid a weekly salary and is usually of the same status as a minor foreman, is certainly not good enough. When there is much work it is often physically impossible for him to inspect it, and too often members of the council who are his employers are interested in the scheme. What is required are the services of professional men of independence and integrity. Whether they be appointed by the county councils on the same lines as in London, or whether the scheme devised by the National House Builders' Registration Council, which has already shown promising results, be used, is a matter on which some may think there is probably room for discussion.

In conclusion, we welcome this report as a painstaking and careful attempt to deal with a very difficult problem, but we are of the opinion that the committee have not faced the basic trouble, which is that while workmen, merchants and manufacturers are attaining security, the builders themselves, and hense their technical and managerial staffs, are becoming less secure. Under such circumstances the greatest optimist cannot expect faithful service to the community. The builder, under the present system, is still the chief link in the chain, and if that link is weak the chain must break.

REGISTRATION OF BUILDERS
SAFEGUARDS AND LOOPHOLES

FROM A CORRESPONDENT.

SIR MALCOLM EVE'S recent admission that the Government was having to watch mushroom firms of builders has caused serious disquiet in the minds of many established contractors who have suffered from the vicissitudes of war-time control of the industry. It is believed that these firms figure prominently in the black market to which Sir Malcolm referred during his first progress report on the repair programme.

Unless strong steps are taken by the Government to stamp out this evil, the post-war prospects of the reliable employers, who are endeavouring to repair the war-damaged buildings as quickly and efficiently as possible with unbalanced labour forces of "old" men, are not too hopeful. How has this deplorable state of affairs come about?

During the early days of the war few people were inclined to spend money on house decoration or even on maintenance. Labour began to drift from the industry. Medium and small contractors were unable to retain the services of their operatives because they were not capable of undertaking the vast war contracts then being let. Naturally, the large firms, with the huge contracts, required this labour, and so built up operative forces of formidable size.

With the advent of Regulation 56A the position became even more difficult for the medium and small contractor. Later, the £500 limit was reduced to £100 (it is now £10 in the London Civil Defence Region), and further categories of work were brought within the ceiling, and the Restriction on Engagement and Restriction on Transfer Orders were introduced, with the result that, at one time, it was announced by the Ministry of Works, 32,000 firms had no employees.

Government policy, as announced, is that men taken away from their employers to work on war factories, airfield construction, etc., would be given the earliest possible opportunity of returning to their former employers. In a few instances this has happened. But what is the position of the majority of employers?

They are forced to sit back and watch their ex-employees, returned to London through the Employment Exchanges, allocated to rival London contractors working on repair of bomb damage. In hundreds of cases these firms who had their labour taken away have been reduced to joining working parties of small contractors under the organisation of the Ministry of Works. True, each of these firms has a separate contract, and this method is an excellent one for utilising every possible operative on the job which has top priority. But a sincere effort should be made by the allocating committee to send such returning operatives to their pre-war or normal employers and to use the volunteers from firms outside the London area to keep the balance between the boroughs.

Employers who joined the Fighting Forces and others who were forced out of the industry by war conditions are asking what chance they have of returning to their old industry when they are demobilised or when they become redundant in their war-time work. Will they be able to get a certificate of registration under Regulation 56AB?

Reassurance can be given on this point. The Regulation was recently amended by an Order in Council, S.R.O., 1944, No. 745, which explains the position of people wishing to set up a new business (or to re-establish an old one) in the building and civil engineering industries. If the Minister of Works is satisfied that an applicant for registration was in full-time business as a building or civil engineering contractor at any time between May 1, 1939 (the date of the first mobilisation for the war), and October 1, 1941 (the date on which D.R. 56AB came into force), or that the application is for the purpose of carrying on or reviving a business previously registered, *a certificate of registration shall be granted as a right.*

This provision covers all cases in which a business has been shut down because the owner was called up as well as cases of applicants taking over an existing business by purchase or legal succession. It should be noted that when a business is taken over the registration certificate has to be returned to the Ministry; certificates are the property of the Government and cannot be sold with a business or bequeathed to anyone, though they cannot be refused for the purpose of carrying on an existing business or reviving a business previously in existence. This has a danger attaching which is referred to later.

Under this Order the Minister of Works has power to control entry into the industry, which power it is considered necessary to maintain because the number of firms already registered is greater than is necessary to carry out the work within the capacity of the available labour force. The need for this control is said to arise primarily from the war-time reduction of the labour force—and it is proposed to remove the control when the labour force reaches 75 per cent. of the pre-war figure. Meanwhile, a committee of three anonymous independent persons has been appointed by the Minister of Works to advise him whether an application (which cannot be granted as a right) should be granted. This committee takes into account the needs of the community (both generally and in the area to which the application relates) and the views of all sections of the industry. The committee has been instructed to give sympathetic consideration to applications from ex-Servicemen who are not entitled to a certificate of registration as a right.

The Order also makes it clear that firms providing water, light, heating or other services in connection with building or civil engineering work must be registered. Further, where a firm has a branch doing any building work for outside customers registration is necessary. And, most important, the Minister has the power either to revoke a certificate on breach of the conditions attaching to registration as to observance of joint industrial agreements or to suspend the certificate wholly or in relation to a particular area and site. But the back door is left wide open to unscrupulous financiers who are anxious to exploit the post-war prospects of the industry. When an employer dies or decides to retire, such a speculator can purchase the business and be entitled to a certificate of registration as a right.

Here, surely, is a further argument in favour of qualitative registration. It is not good enough to argue, as many have done, that there should be no control over a man's right to invest his money as he pleases *if this is to result in shoddy building.* By all means let anyone invest in a contracting undertaking, but only if he is not allowed to dictate the method of construction of a building.

While these conditions remain, the only safeguard the industry has is for its members to undertake not to dispose of their businesses to unqualified men and to refuse all offers from those who are intent on giving the industry a bad name while they take all the profits.

ORGANISATION AND MANAGEMENT IN THE BUILDING INDUSTRY—I

UNIVERSITY EXTENSION LECTURE BY MR. T. P. BENNETT

THE first of a course of three University of London Extension Lectures (and discussions) on "The Principles of Organisation and Management as Applied to the Building Industry" was given by Mr. T. P. Bennett, C.B.E., F.R.I.B.A., Hon. F.I.O.B., Hon. F.I.B.D. (late Director of Works in the Ministry of Works), on Tuesday, November 14, at 5.30 p.m., at the London School of Hygiene and Tropical Medicine, Keppel-street, Bloomsbury, London, W.C.1. Following is the complete text of the lecture :

To understand the character of the organisation needed in an efficient building industry, it is necessary to understand the complex character of the units of its structure and the diverse nature of its individual operations. The twentieth century has seen far-reaching changes in the technique of building and these changes have been reflected in the structure and personnel of the industry and in the nature and conditions of employment of many of its operatives.

At the close of the last century, building was still a traditional craft industry, its work was carried out, broadly speaking, by the same methods and same technique as were the buildings of the Middle Ages and the Renaissance and to a large extent in accordance with the general methods of construction used in ancient Rome.

But for nearly 100 years the development of iron and steel has been gradually modifying these constructional methods, while scientific development in other fields had crept into the equipment of buildings and lighting, heating, ventilation, lifts, escalators, telephones and other equipment has more and more necessitated the employment of specialists. The effect of the changes in technique caused fundamental changes in organisation.

Character of Work and Size of Building Firms.

Perhaps before an examination is made into the character of the organisation and its changes, it would be well to survey very briefly the character of building work and the size of building firms.

The most elementary type of building work is that contained in the small maintenance and repair work throughout the country. These small day-to-day works that keep our buildings in habitable condition absorb a very large amount of labour. Every hamlet has its own "builder" craftsman. Every town has its force of building employees engaged almost exclusively upon maintenance and repairs. It is difficult to identify with accuracy the size of this labour force, but in 1939 it may well have employed continually upwards of 250,000 men.

LARGER WORKS.—Above this level there were a large number of contracts varying in value from £100 to £20,000, simple in character, varied in requirements, but embracing a very large part of the wants of the community, the simple home, the small school, the block of retail shops, the village hall, the small hospital or factory and extensions and additions to all sorts of existing buildings. These works absorbed the bulk of what have sometimes of late been called "The Small Builders."

Above £20,000 contracts rapidly become more complex and embrace many sub-contractors, of whom more will be said later. Large contracts such as those for head offices of banks and insurance companies, the great hospitals, larger blocks of flats, and municipal buildings embrace so large a proportion of work that is sub-contracted that the principle of organisation is fundamentally changed.

CIVIL ENGINEERING.—It will be noticed that I have omitted reference to docks, railways, aerodromes and bridges, because these are works of civil engineering, and although the problems are clearly allied and even in some cases identical, there are distinct differences between the principles of building work and the principles of civil engineering.

Changes, 1844-1944.

The organisation of small building operations has shown small change, but the larger works of 1844 were carried out by a building contractor who himself employed continuously most of the men engaged upon the work. He had workshops in his yard devoted to joinery, masonry, plumbing, painting and smith's work. Almost all the men knew the master builder and had worked for him generally and for the firms for long periods.

Before 1939, and to an intensified degree during the war, the size of the builder's staff and the number of operatives he has employed has fluctuated very largely, legislation has directed men to strange employers in different parts of the country, and to a large extent the teamwork of building has been destroyed.

The introduction of specialists in steel, electricity, heating, high-class finishings and other sections of building work has been an additional factor of disintegration, and in 1944 the large contractor has ceased to be a master craftsman, and has been fixed by circumstances to become an organiser and financier.

The complication of many modern buildings has also complicated the work of the professional control of building, and the architect has been affected by the same social forces as the builder. In 1844 an architect could design in his office almost every part of a great building. It entailed only a knowledge of masonry, brickwork, joinery, smith's work, plastering and decoration and a mathematical control sufficient to calculate the effect of static loads, vaulting and a few other portions of the fabric. To-day, no one man could possibly acquire or operate the vast amount of technical knowledge and experience needed to plan a great building, design its elevations and decoration, calculate its steel or reinforced concrete structure, and work out the details of its electrical equipment, its heating, ventilation and its lifts. This change in the operation of the industry has been relatively rapid, and perfect organisation has not yet overtaken the change.

Legislation.

Side by side, but not necessarily related to the change in building technique, legislation has steadily increased its control upon the industry. Sanitation, structure, safety regulations and town planning have increased the protection of the public or directed the operation of individuals for the public benefit, and more and more of building procedure has needed approvals under one regulation or another, so that pre-contract work has largely increased and has lengthened the period of preparation. In large projects this period has caused a very serious gap between the conception of an idea and the cutting of the first sod of the building contract, let alone the period at which the occupier may hope to enjoy the benefit of occupation.

Legislation has, moreover, become more and more permissive, that is, subject to the discretion of committees, and while this has given it some elasticity it has added very materially to its uncertainty.

I have given some prominence to the fact that building is an industry of virgin projects, because it is seldom appreciated that this fact is fundamental to the realisation of the character of the organisation needed effectively to control the work. This virgin or creative character, moreover, places a great responsibility upon the building owner, be he individual, board of directors, committee, or Government Department.

The Building Owner.

If the building owner is uncertain of his requirements, or fails fully to grasp the way in which his technical advisers propose to offer him their solution, all organisation of building work breaks down, and since post-war building will bring many thousands of people for the first time into the position of building owners—*i.e.*, through the medium of their work on committees, their part in building organisation will set the seal upon the success or failure of all subsequent operations.

Since the building owner's contribution is the foundation of all building organisation, it will be well to start taking his part in detail to see what it means and how it can most efficiently be operated.

It is perhaps necessary to examine the reasons which have prevented the public or private building owner from realising more greatly the essential part he plays in building organisation. It arises from the state of abundance in which we have lived, the fact that much building has been done for the wealthy or for wealthy corporations or organisations, and that in many buildings of the past, cost and time have been entirely subordinated to result. The cathedral is a good example.

The simplest work of decoration or repair has been affected by these circumstances, and has fostered an acceptance of the economically inefficient. The building industry has operated for many years under two complementary but deleterious influences.

Surplus Labour.

(1) The presence of 200,000 unemployed. These men have always been available ready to fill a gap or respond to a demand at a moment's notice. Thus no contract for many years prior to 1939 was held up for lack of men, even if no proper foresight had been exercised and even if there had not been the most elementary forecast of labour requirements. Any demand of building owner, architect or contractor could be met at an hour's notice.

This discounted indecisive instructions, change of plan, or revision of requirements. No matter what demands were made by any party to the contract, men were available to execute the instruction. Thus the building owner did not, to his knowledge, suffer any of the consequences of his vacillation.

(2) The operative was subject to an hourly engagement. Thus the builder suffered no immediate monetary loss if he over-budgeted his requirements, the men merely became redundant and were discharged. No one was saddled with surplus employees, no one but the operative himself felt the baleful results of this type of inefficiency.

There was a third contributory cause of high cost and loss of time which passed unnoticed and that was the abundance of

materials. The lack of definition, the change of mind brought no cessation of building operations, the gap was filled by surplus material conveyed by surplus transport.

The Simple Operation.

Let us look, then, at the effect upon the building employer of even the simplest operation. The order is given to repaint the exterior of a house, and the builder submits a price, allowing for making good defective work and painting two coats. Men arrive and go through the process of washing off, and after some days, the owner is asked to settle the colour. If the paint does not arrive for a week, two or three painters are discharged and re-engaged at a later date, but the delay pre-war was rarely more than a few hours. In the post-war period no such free supply will exist and delay due to late decision may be a month. Then colours must be chosen, and the paint delivered before the work is commenced, and the men will see that they can work at full pressure without fear of interruption or discharge. This process should always have been universal practice.

The Project Grows.

As the project grows, so the difficulty of decision increases, and the complication of choice and diversity of alternatives grows greater. Moreover, real decisions become impossible without technical aid of a precise, informed and well-directed character.

The next building owner's decision that will be of universal necessity will relate to housing. This starts with fundamentals : (*a*) The location of site ; (*b*) the disposition of existing shops, schools, amusements and civic amenities ; (*c*) the density of dwellings ; (*d*) the number and variety of types ; (*e*) the details of plan ; (*f*) the choice of materials ; (*g*) the measure of cost ; (*h*) the limit of time.

The list of headings shows that at this stage of the layman's part in building organisation, two guiding factors are needed : (*a*) Town planning legislation ; (*b*) technical advice.

Small Houses.

The widespread need for technical advice and the similarity of requirement of small houses have together led to the creation of a " ready-to-use " section of the industry. This section has erected houses to a vast extent and latterly factories, to a small extent, complete in virtually all their details and the public is, therefore, able to buy or rent this type of building just as it buys its car.

It is important to examine this activity of the industry, because it has many factors which bear upon organisation as a whole.

Economy of the Mass-Produced House.

The first obvious point of comparison for those who know is the fact that for equal areas of accommodation the " ready-to-use " house is from half to two-thirds the cost of a similar house built to a special design. This is a very serious difference. It arises from a number of causes :—

(*a*) Decisions on design are in the hands of a builder who acts upon the same lines as a manufacturer and checks the cost of each portion of the work before it is allowed to go into production.

(*b*) Every detail of the work is settled before construction is commenced.

(*c*) All materials are ordered well in advance of their required date of delivery on site.

(*d*) A well-organised and very efficient method of construction is arranged and carried through without alteration or interruption.

(*e*) Competitive pressure is exercised by the comparison with the selling price of other similar buildings.

(*f*) Minor individual idiosyncracies are eliminated.

As with every human activity, there is no gain without loss, and these ready-to-use articles often lack variety, the sense of craftsmanship, and show signs of the domination of the cost factor. Nevertheless, as a contribution to the study of the organisation of the industry, they must be appreciated. They represent the nearest parallel in building to the demand and supply conditions of other industries and the most simplified form of building contact between " builder " and " owner."

The characteristic of the ready-to-use house or factory is that the building owner can see the exact form of the completed structure and examine it for : (*a*) Planning ; (*b*) appearance ; (*c*) equipment ; (*d*) quality ; (*e*) price. It should be noted that the time factor is otherwise absorbed and is therefore discounted.

When buildings cannot be completed in this way, and offered for the acceptance or rejection of the owner, it is evident that a different technique and different procedure is needed to secure a parallel result, and thus the public interposes between itself and the builder a technical advisory force, which may be an architect alone or a group consisting of architect, consulting engineer and quantity surveyor.

The Professions and the Industry.

These men may operate as individuals in private practice or as salaried officials employed by local or county authorities or by a Government Department. If the individuals are sound, competent, well trained, keen and energetic men, the public may be equally well served by either.

The procedure is, however, more difficult and more complicated, and success depends upon the clear conveyance of requirements of the future user to the technical force and correct and acceptable interpretation of these requirements by architect and consulting engineer.

Control of cost and quality becomes a necessity and the combination of architect and quantity surveyor comes into being together with a form of contract and penalties for non-performance.

Tabulation of Requirements.

The tabulation of requirements is by no means easy, since, while there are many who know whether they like a house when they see it, there are few who can describe in complete lay detail the house they would like if they could have it, still less do they know whether what they want is within their financial capacity.

In State-aided housing a policy of density and accommodation is necessary and any given area of accommodation can be disposed in many ways. Indeterminate requirements cause confusion leading to alterations to half-completed contracts, while demolition of partly constructed buildings causes disaster. Thus it is imperative that good organisation should produce a machine which will lay good foundations for the future contract and allow good management to function properly.

Clear Realisation of Requirements.

Housing requirements are broadly approved nationally by technical and lay committees and are, therefore, impersonal to the individual contract, but each man or woman who personally or collectively has to direct a housing project should endeavour to master the published plans and start by writing down local requirements in a schedule. This schedule can hardly be completed without technical advice, and the next step is therefore to consult an architect and arrive at a clear drawing and layman's specification which shows exactly what it is proposed to build. At this stage every effort must be made clearly to visualise the final product, and to this end use should be made of : (*a*) The clear coloured plan ; (*b*) the clear elevation ; (*c*) the perspective ; (*d*) the model ; (*e*) the sample house if the number to be built is substantial.

Compared with the cost of the building, the cost of (*a*) (*b*) (*c*) is small. (*d*) Block models are not costly and generally of the greatest value. The cost of (*e*) will be fully justified on large schemes.

The Questionnaire.

The architect at this stage should make wide use of " The Questionnaire," so that all the alternatives which occur to him as possible or desirable are clearly brought to the notice of the building owner, so that detailed consideration can be given to them before any considerable expenditure is made on drawings. Too little care has been taken on many contracts to ensure that clear understanding exists at this vital stage, and a contract started with uncertainty or risk of alterations never runs smoothly or economically.

The combination of architect and quantity surveyor then comes into operation to assess the cost. It would be impossible to contend that in general the costing system of the industry is either comprehensive or reliable.

Estimate of Cost.

Architects and quantity surveyors have not, as a whole, maintained analysed cost or worked upon extensive and reliable data, so that advice to prospective building owners is frequently misleading. As a result of this weakness in the machinery of the professions costs appear to the layman to have an airy uncertainty which is quite unnecessary, although the cast-iron accuracy of the repetition product can never be ensured.

The virgin or *ad hoc* character of building works, together with their large field of contingency items and risks, has tended to obscure the possibility for creating good costing systems, and the rough estimates generally prepared have far less reality than need be the case.

A number of factors contribute to the continuity of this hazy treatment of expenditure, involving in many cases large sums of money. Some of these reasons may be tabulated.

(1) The loose preparation of lists of requirements.

(2) Changes of programme as the work proceeds.

(3) Unknown, but unavoidable, contingencies such as bad foundations, unanticipated wage or material increases, unexpectedly severe interpretation of legislation.

(4) Commencement of the contract before the formulation of adequate instructions.

(5) Dishonest competitive tendering.

(6) Insufficient control of the contract.

(7) The fact that the preparer of the estimate has less financial responsibility for finding the finance than has the average industrialist.

The whole of these items do not occur in every project nor are they true of all architects, surveyors or builders, but taken as a whole, they have obscured the possibility of the preparation of costing details which would make estimates for building works much more accurate than they frequently are.

The cost of building is emphasised by price control in other directions—*e.g.*, rent

restriction, food subsidies, assisted education and similar factors, and this is leading to a realisation of the necessity for economic building and a demand for more accurate estimating and costing.

Costing entails a heavy expenditure. It is justified in industry because extensive work and extreme care in working upon the cost of producing an article can be spread over all the articles subsequently made, and will be exactly applicable. Moreover, the manufacturer can recover his cost from the subsequent sales.

The builder who erects houses for sale can recover in a similar manner, and the basis of costing is reasonably fixed. The builder can by analogy keep an item costing system for his works and check each item on each contract with his standard, and find enough gain in efficiency thereby to justify the cost of the system.

Costing and the Architect.

But the architect and surveyor have no such means of recovery, and generally speaking the building owner is not willing to pay for something which, while useful to him, is obviously valuable to all other clients. Nevertheless, the need is gaining ground for much more extensive and accurate figures, and there is a strong case for the extension on the part of the Government of the Schedule of Prices published by the Ministry of Works. An annual publication giving the average cost of a number of illustrated buildings with an itemised analysis of cost of labour and materials would provide some valuable data, which would be a common denominator for many types of work and, by familiarising the technical public with systems and scientific calculation, would go far to lead the way to essential improvement in one of the weak links in building organisation.

Cost of Alternatives.

The cost of the project can be presented to the building owner as a result of a figure based on cubic content or upon rough quantities. It should always contain reference to the cost of obvious alternatives, and should be closely related to the architect's questionnaire, so that at a very early stage in the discussion of a building project there is full realisation of the cost of the basic proposal and of possible improvements and savings.

It is impossible to overstress the importance at this stage of full, honest and accurate figures showing clearly the probable commitment and giving reasonable allowance for contingencies for works which cannot be fully realised at this early stage in the development. With full knowledge of requirements, knowledge of site, of analogous types of buildings, good sketch plans and skilful costing, it is possible in almost all cases to give a very accurate indication of the expenditure that will ultimately be involved.

Accurate Cost Picture.

This careful and accurate cost picture has the salutary effect of forcing consideration at an early stage of all ideas, desires and improvements that may occur to client or architect. At this stage the architect encounters the first group of many technical alternatives which form possible solutions to the problems and affect the general lines of the scheme. Variations in column spacing, type of roof, system of construction, general level of building—these matters should be tested as to cost, so that there is no fundamental change in the nature of the main lines of the project at a later date. Hitherto it has been necessary to talk only of the builder, the architect and the quantity surveyor, but as the size of the building project increases all the processes of interpretation become more complicated.

Field of Knowledge in Large Buildings.

The client's requirements in a large building can to-day only be met by the combined knowledge of a large number of people. These people must be co-ordinated, and the architect is the only possible co-ordinator and interpreter of the total requirements of the building.

There has been much controversy over the possibility of architectural education covering the whole range of knowledge required in modern building, and it is difficult to define the extent to which the architect's training and experience should be carried. Undoubtedly the field is large, the subjects diverse and in many cases of a type which the true artistic temperament finds difficult to absorb. It is also evident that the level of knowledge required varies considerably in different classes of buildings.

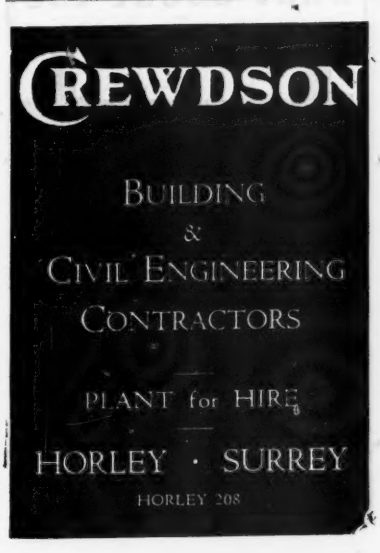
Fees.—The question of economics is not absent, since the fees legitimately required for the professional examination of many elements may well become quite disproportionate to the total expenditure involved, and therefore some detailed analysis of the problem is required.

Modern Scientific Construction.

The application of scientific knowledge to the construction and equipment of buildings has been the cause of the greatest amount of complications in the design of the architect. Fully to appreciate the extent to which this scientific knowledge has affected design, it is necessary briefly to survey the construction of buildings in former periods. In the oldest civilisation spaces were spanned by means of posts and beams, either of timber or masonry. In more complicated construction the arch was used in varying forms, culminating in the surface vaulting of the Romans, or of the rib and panel vaulting of the mediæval period. All these systems of construction had one factor in common, their dimensions were the result of empirical experience.

Early Empirical Guidance.

In early times the structure was erected, and if it fell down it was obviously insufficient in strength; if it remained and did its duty it was regarded as a satisfactory model for future work. To a very large extent types of buildings were limited, except in the Roman Empire, and in a large number of cases a very close analogy could be made of an existing structure compared with a projected structure, so that a capable designer with knowledge of what had been done in the past was able to design his future buildings with considerable safety and by this acquisition of empirical knowledge. Moreover, all these types of construction had a very substantial margin of safety, so that there was not any need to design within the very tiny limits which modern economics have made necessary.



Variation and Economics.

Two factors have, therefore, been added to the inroads of scientific development, the first is the need for designing a complicated series of buildings capable of serving a large number of different purposes; the second important factor is the increased use of buildings for the population as a whole, and the decrease of the percentage of buildings which are regarded as great monuments of the Church or the State. This has introduced an economic factor which is of great importance in construction, because it means that every building must be designed as near the economic limit as science will permit.

Modern Application of Science.

It is now desirable to survey the parts of buildings which have been affected by scientific development. The first, possibly the most far-reaching, is the introduction of steel and its accompanying application of reinforced concrete. Steel and reinforced concrete have enabled buildings to be erected with very large unobstructed spaces, ample provision for daylight, and with thin enclosing walls, thereby increasing the amount of space available for use in a given perimeter and increasing the speed of construction. In order to use this material economically it has been necessary to study its scientific behaviour, and to deduce, from experiments on steel and reinforced concrete, a series of formulæ which govern its application in particular cases.

The Structural Engineer.

The designer of the building finds that the demands of structural work have created the fresh profession of structural engineer, and that it may take a lifetime to become a master of both steel and reinforced concrete as used in retaining walls, floors, walls and roofs. The extent of such engineering knowledge is far too great for any general practitioner in architecture to have more than, on the one hand, general knowledge of the principles of construction, and on the other ability to design the simpler types of buildings which are needed. As soon as it becomes necessary to design the steel and reinforced concrete for a complicated building the employment of a structural engineer becomes a necessity.

Heating, Ventilation and Hot Water Engineers.—The next large field of scientific application is that of the heating scheme, coupled with which is artificial ventilation, and the provision of hot water. These three sub-divisions of the science of heating and ventilation in their application to large buildings again cover a very wide field of scientific knowledge, capable of very considerable variation and involving very extensive calculations. This aspect of building equipment has employed the services of a separate profession, the heating and ventilating engineers.

Electrical Engineers.—The twentieth century has also seen the development of electrical science, again involving the application of very extensive principles,

and demanding a lifetime for the study of problems of lighting, electrical equipment for heating, and the application of electricity to a number of the subsidiary but essential functions of buildings, such as lifts, escalators, motors attached to heating schemes, and a large number of other services with which we are all familiar. No individual architect can hope to possess that amount of electrical knowledge which is necessary if he is to design the larger type of electrical installation; it is at the most possible for him to be familiar with the principles of the application of electricity, the main requirements of electrical equipment, and possibly sufficient detail to enable him to design the smaller type of installation.

Other Equipment.

These fields of knowledge by no means exhaust the survey which the architect has to make of his work. The installation of lifts, the design of the lift machine itself, the electrical contactor system by which it is operated, the brake and other safety devices, all constitute a field of exceptionally specialised knowledge which no general practitioner can hope fully to compass within his own experience. Even some of the details which are of more general application need quite considerable attention and study before the architect could operate with real confidence and knowledge without the assistance of an electrical engineer.

Acoustics, soundproofing, telephones, public address systems and other matters have developed substantially within the last 25 years, and again constitute a field of specialised study upon which a specialist's knowledge is needed.

Effect of Complicated Design on Organisation.

Sufficient has been said of the complication of the design of buildings in the twentieth century to show that there is very material effect upon the organisation of the average office if it is to carry out its work efficiently. It would be untrue to say that the profession has entirely solved the problem thus presented. It realises that an individual architect cannot embrace within his own knowledge the power to plan, to design beautiful exteriors, to control the decorations and the furnishing, to calculate the structure and design its scientific equipment. The profession, from the point of view of organisation, has therefore experimented with various means of meeting these conditions.

The Partnership.

The first means is that of the partnership, by which one partner is a planner and a designer, another partner has good constructional knowledge. This partnership of men with different artistic or scientific attainments has perhaps been more widely developed in America than in this country, and it would seem to point the way to one of the best means of solving the organisation problem of the architect's office of the future. It has, in the view of many Englishmen, one great drawback, that is the artistic mind that aims at architecture as a profession, has a great liking for the small practice where all the work is done individually, and the building is controlled, as far as possible, by one man. For this reason the larger practice has not been looked upon very favourably by a great number of architects. It is obvious that as soon as the partnership embraces three or four men of very substantial attainments it is necessary to have a substantial business to support those men and provide them with continuity of work.

The Public Office.

It will be seen, however, that the conditions of design and the economic times in which we live are exerting considerable pressure towards the establishment of the larger architectural practice, or of the execution of work in the public office of the county architect, the borough architect, or the Ministry which will enable these various functions of buildings to be in the hands of specialists. The architectural partnership must, therefore, be regarded as one of the organisational answers to the complication of building, and the growth of the public architectural office must be regarded as another solution of the same problem.

Consulting Engineers.

The second means by which the profession has endeavoured to solve the problem has been by the employment of consulting engineers. There are in this country a considerable number of consultants, many of them have attainments of the highest order and are regarded as the leading men in their respective professions, but so far the architect has not used these consultants in the universal way which one might expect, and indeed the universal way which the public demands, that its buildings should be designed and controlled. Public opinion more and more insists that when it commissions advice for the design of its buildings, professional advice must extend to all the portions of the building. What the public have not realised is that in the large types of buildings the cost of this professional advice is very substantial; hitherto it has endeavoured to remunerate the architect with a flat rate of 6 per cent., which, while it may be adequate in the smaller types of buildings, is not sufficient to cover the employment of all the experts that the larger building needs. We therefore see a picture of economics in the architect's office impinging itself upon the organisation which is necessary to carry out his building.

Sub-Contractor-Designers.

This contingency has been met by the sub-contracting firm that undertakes to design its own specialist work. These firms of specialists have come into existence not so much as the result of pressure from the architect's office as the result of the growth of their particular branch of science as applied to buildings during the transition period. The growth of the use of steel and reinforced concrete was very rapid once the principles were established, and firms were created very quickly to endeavour to meet this particular demand. In order to meet it they found great scarcity of designers with the requisite knowledge, so they added to their staff men who could act as designers and not merely as fabricators. Very much the same set of conditions called into existence the great heating and ventilating firms and the great firms of electrical engineers, each of them finding that it was necessary to retain staff engineers to control and design the work. Over the period of years which bridged the century there came into existence, therefore, a number of designer-contractors, who were used by the architect as part of the organisation of the design of buildings, and they to-day exist and still carry a very large part of the design work which is necessary. It is obvious that in submitting their tenders for the work they must include a designing fee, and the public, therefore, pays this fee as part of the cost of the building. One of the immediate problems with which we are placed in studying the organisation of the industry is the necessity for retaining professional men to design and control the whole of the construction and equipment, so that the individual client, or the public as a whole, is properly safeguarded upon cost and quality, and both the public office and the private practice has to face and solve this problem.

The Quantity Surveyor.

England, perhaps uniquely, has developed the profession of the quantity surveyor. In London he has become an independent professional man employed by the architects to take off the quantities of material and labour shown upon the drawings. In the provinces quantity surveying is still very largely carried out by staff in the architects' offices, but in the larger towns the work of quantity surveying is tending, as in London, to become a separate profession. The quantity surveyor, in addition to his job of taking off quantities, acts as a quasi-arbitrator on questions of dispute on the builders' accounts. This position is one jealously maintained by the quantity surveyors and regarded as of considerable benefit in the industry.

It is obvious that in the execution of a contract the architect issues drawings, and if they are late or incomplete or capable of being misunderstood, additional cost may arise. When it comes to a question of payment, it is conceivable that the architect might be regarded as an interested party instead of an entirely independent one, although, amongst architects of good standing, there is no suggestion that they have acted unfairly in deciding upon disputes of this kind. The quantity surveyor, having had no responsibilities in the formulation of the instructions to the builder or the information shown on the drawings, may be in a position to take a more objective view.

To the office of preparing bills of quantities the quantity surveyor is rapidly adding estimating, and in my view it will be necessary that he should still further extend his knowledge by carrying out a continuous system of costing on works in progress, so that his knowledge of pricing is built upon actual experience and not merely upon an analysis of different prices obtained in tenders for different types of work.

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Quantity Surveyor and Specialist.

In recent years the quantity surveyor's work has been modified, as has that of the architect and the building contractor, by the advent of the consulting engineer and the specialist sub-contractor, so that to-day a very large part of the items in the bill of quantities are what are described as "Prime Cost Items" or "Provisional Sums." These are sums of money put into the contract representing the estimated cost or the actual tender price for the steelwork, heating, lighting, ventilation, lifts, and so forth. The building contractor has complained that the bills of quantities, therefore, provide for severe competition on what may be no more than 30 per cent. of the total value of the work involved, and that on the remaining 60 per cent. the prices are stated in the quantities, and the builder is precluded from tendering for this part of the work.

There is pressure in some quarters for the quantity surveyor to be provided with sufficient detailed information, under the headings of these sub-contracts, to enable him to price a very much larger proportion of the total building contract than he has been able to do in recent years; this applies particularly to large buildings. If the quantity surveyor is to do this work successfully it will be necessary for him to acquire a considerable amount of specialist knowledge which all quantity surveyors by no means possess. On the other hand, much of this work must in any case be sub-let, and the proposed pricing by general contractors would stress "price" as against quality, and would adversely affect the interests of the building owner.

Accurate quantities have been made ineffective in a great many cases because the work has not been fully detailed before the quantity surveyor starts to take out his quantities, and it is therefore found that the bill of quantities has become an inaccurate document in many cases :—(a) Because the drawings were not sufficiently complete, (b) because the large proportion of the cost of the contract is in the nature of lump sums, not subject to quantities. The existence of these two factors tends to make the client uncertain of the final cost of his building.

Standard Method of Measurement.

Accusations have also been levelled against the quantity surveyor of developing a system of measurement which is far more meticulous than it need be and has thus added unnecessarily :—(a) to the work of the quantity surveyor and therefore his fees, (b) to the cost of the finished work by so sub-dividing the pricing that quite an unnecessary number of figures are added, each of them contributing, however small the individual unit prices, to the total cost of the work. The system used in England to-day is the Standard Method of Measurement produced by a joint body appointed by the Chartered Surveyors' Institution and the building contractors. It has very many great merits. When applied to the smaller works it appears to produce far more items than any competent builder needs to give an adequate price, and this somewhat unnecessary subdivision opens the door to claims for extras for work not so meticulously described. This meticulous measurement, coupled with a system of keen tendering, tends to provide a loophole for many contractors to secure claims at the end of the contract.

The principles of quantity surveying as applied to the industry in this country are unquestionably sound, a great asset to the clients, the architects and the builder, and if properly carried out on fully worked-out drawings will give a very accurate representation of the cost of the work. The quantity surveyor, therefore, is an essential part of building organisation.

In opening the proceedings, the Chairman, MR. CLOW FORD (University Extension Registrar), said the course was somewhat of a novelty in the University. The war had been described as an engineers' war, and the peace must be a builders' peace. Mr. Bennett was no stranger to the University : at one time he had been head of its Department of Architecture.

At the conclusion of the lecture the Chairman invited questions, but none being put, he suggested that people should think over the lecture and ask the questions next week.

Facilities for Physical Recreation.

ARCHITECTS will find of permanent value a booklet, "Facilities for Physical Recreation," issued by the Central Council of Physical Recreation, and intended primarily for the use of local authorities. Among the problems of the latter in the years of reconstruction will be that of providing adequately for leisure time activities, including every form of outdoor and indoor physical recreation. While many of these activities are best done by organised groups, the Council stresses the need to have also in mind the many members of the public who prefer to take their recreation as individuals. The architect and planner will appreciate the section in which the particular requirements in space, equipment and buildings are given for all the popular games and activities. Price 6d., the booklet is published from 58, Victoria-street, S.W.1.

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NEWS ITEMS

A Promotion.

THE promotion of Colonel A. H. Killick, Secretary of the Chartered Surveyors' Institution, at present on war service, to the rank of Brigadier, is announced.

Building Societies Association.

VISCOUNT CECIL of Chelwood has accepted re-election as a vice-president of the Building Societies Association. He is trustee of the Building Societies Institute.

Mr. J. Norman Daynes, K.C.

THE Ministry of Works announces that Mr. J. Norman Daynes, K.C., has retired from the office of Director of Cement in the Ministry of Works, and intends to return to practice at the Chancery Bar.

R.I.B.A. Final Examinations.

BELFAST will be a centre for the forthcoming Final and Special Final Examinations, to be held from December 6-14 next. The arrangements will be in the hands of the Royal Society of Ulster Architects, acting for the R.I.B.A.

Local Authorities Combine for Planning.

A JOINT Executive Planning Committee including fifteen local authorities has been formed in Surrey with the encouragement of the Ministry of Town and Country Planning, and will operate from November 1. The Committee, which will be known as the North-East Surrey Joint Planning Committee, will include representatives of Croydon, Barnes, Richmond, Kingston-on-Thames, Esher, Surbiton, Wimbledon, Malden and Coombe, Merton and Morden, Sutton and Cheam, Beddington and Wallington, Mitcham, Epsom and Ewell, Carshalton, and Banstead. These fifteen local government areas will in future be planned as a single unit. This area, parts of which suffered badly from flying-bomb attacks, includes industrial and residential districts with a total population of nearly a million, and a pre-war rateable value exceeding £11,000,000.

It is the policy of the Ministry of Town and Country Planning to encourage local authorities to co-operate in this way, and of the 1,441 Local Planning Authorities in England and Wales 1,045 are now combined in 181 Joint Planning Committees.

Cambridge Preservation Society.

THE 15th annual report of the Cambridge Preservation Society indicates a busy year of work of preservation and protection. Reference is made to the American Cemetery on Madingley Hill which, in spite of representation made at a stage when the scheme was "most secret," has come into being, the choice being "irrevocable." The report continues : "As Madingley Hill is the very citadel of our endeavours to preserve the setting of the university town of Cambridge, the Society asked for the most earnest consideration of all those concerned in order that the lay-out might be worthy of the beauty of the site and the high purpose for which it had been specially chosen by our American friends and allies. After many discussions with the Under-Secretary of State, the Imperial War Graves Commission and high officers of the U.S. Army and the U.S. War Graves Registration Service, the Society's suggestion that a landscape architect of the highest standing should be retained to advise on the lay-out was adopted. Shortly before his death Sir Edwin Lutyens, P.R.A., had expressed to the Society his willingness to act if called upon to do so : and after his death Prof. A. E. Richardson, R.A., and Prof. Patrick Abercrombie were approached by the authorities and accepted the charge."

ELECTRICAL INSTALLATIONS

POST-WAR BUILDING STUDY NO. 11.

THIS very important number in the series of Post-War Building Studies* will be read with interest by many others than the technically minded; for it is a subject of first importance to post-war planning.

Electricity is a dangerous kind of energy, and nothing but quality and care in installation can make it fit for human use. The risks that have been taken in the past have been the frequent causes of minor catastrophe, and much good money has run to waste through necessary replacements of shoddy and indifferent material and workmanship. If this publication did nothing else than show that the electrician must be a highly skilled technician, and that his work is not something that can be done by the "man of all work," it would serve a useful purpose. In actual fact it goes much further than this, and has much useful information for the technician himself as to improvements in methods and equipment.

One omission from the report may be taken as arising out of the terms of reference, that is, the question of cost, which is a word that does not appear even in the table of contents. Now it would appear to us that this is an element that enters more fully into the question than in any other branch of engineering. We know well what an important matter is the level of the "peak load" in any electricity works, and how much the economy of such an establishment depends upon a level of consumption which approaches as nearly to that high level as possible. This means that to meet the lighting requirements of a dense area of population during the hours of darkness the day load, mainly for power purposes, becomes a vital economic factor. The check upon this ideal balance is the matter of cost to the consumer, and this latter may be said to present practically the only obstacle to a more general acceptance of this clean and easily distributed form of energy.

Thus we close a stubborn circle whereby the cost of the product prejudices the economy of its production, and recreates high costs. The circle can only be broken in one or other of two ways. Either the suppliers must be content, if need be, to run at a loss for a term to encourage consumption until the economic balance is reached, or the supplier must be content to pay dearly for the product for a term so that the balance can be reached in that way.

It would appear to us that the conditions that face us in the near future lend themsedves to a solution. One of the largest consumers may be the State, either directly or through the municipalities, and an advance might be made that would be decisive through the agency of subsidy in some form or other. On the other hand, State or municipal undertakings would be in a position to overcome the difficult interim by some other means. If this were merely a means of putting a single industry on its legs there might be little to say for it, but in actual fact the question lies much deeper than this. Electricity offers a handy means of reducing the burden of household drudgery to manageable proportions. The washing-machine, the carpet-sweeper, the refrigerator, the portable radiator, remain luxuries beyond the means of those upon whom the burden of housework bears the hardest. It is a social question upon which much depends for the future of a contented country, and the equipment which we shall supply to the modest home in the approaching post-war programme of building can be selected with confidence only so soon as we know whether the people we serve can afford to use the things we provide.

Of course, this is not within the prescribed subject of electrical installations, but it must remain the ruling factor, and we feel that even in this report the failure to refer in any way to this social and economic factor is a regrettable omission, however inconclusive such comment might have to be.

However, there is much to commend in this thorough and painstaking report, which holds its own well with the others which have already been published. The subject-matter has been admirably arranged, and a great deal of useful data have been collected and presented in clear and useful form. Among these, such tables and diagrams as those dealing with the immersion-heater and water-heaters generally will be found very useful to the housing architect, whose concern is much concentrated upon the provision of the minimum convenient space. We see also several excellent suggestions for the improvement of equipment, in which the neat container for the consumer's supply control is particularly attractive. The untidy assembly of ragged units which often defaces the small house can usually be made tolerable only by the provision of an unnecessary cupboard. We ought not to have to be ashamed of these things, and proper design points the way to a solution.

Standardisation also receives a proper measure of consideration, and there is ample scope for simplifiying an embarrassing surfeit of standards in electrical equipment. Movements in this direction, as in all other industries, need an abundance of good will on the part of those concerned, and a great deal of serious planning in advance. We cannot afford to let any more energy go to waste by providing the public with a wider choice than they need or desire, and it is nonsense to speak of the freedom of the individual in such a connection.

It is an excellent thing that the ideal practice described in this report should be set down in clear and unmistakable terms before we launch out into new developments, and it is to be hoped that powers of control, which are already fairly wide, will be exercised severely to the exclusion of all trumpery materials, workmanship, and electrical method. The temptation to make use of all fallacious economies in first cost that the market can offer will be doubly strong when we get deep into this costly business of housing, and we shall have to be very circumspect to resist it and so to avoid the larger and recurrent waste that follows all false economies. This report points clearly to the means, and it is for us to see that full advantage is taken of the knowledge we have.

Again we meet the question of cost, and feel the need for an immediate relief from the recurring overhead which has put the brake on electrical development, which relief will help us to afford the best in capital outlay.

The inauguration of the Grid system is still fresh on our minds, and still fresher is our disappointment in its results. We have seen a few cases of prolonged breakdown occur, alhough it had been said that this would no longer be possible. Still more are we conscious that the economies in distribution which we were assured the system would produce have not always found their way back to the consumer. When we read such a report as this we can arrive at only one conclusion, that the fault is not in the technical side of the industry but in the financial and political sides.

* H.M. Stationery Office. Price 1s. 6d. net

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Housing Equipment Exhibition: A Correction.

We regret that two errors occurred in the article on the M.o.W. Exhibition of Housing Equipment at Birmingham, which appeared in our issue for October 27, and would like to make it clear (1) that there is no difference in the internal depth of the fireclay and the metal sinks, and (2) that the sink and drainer units are not cellulose finish, but stainless steel or porcelain enamelled.

Queen Nefertiti and the Carnarvon Expedition.

Mr. R. F. Hill, director, Higgs and Hill, Ltd., London, S.W.8, states in a letter: "We write to apologise to you and to your readers for the error in our advertisement appearing in your issue of November 3, in which we attributed the discovery of the head of Queen Nefertiti to the Carnarvon Expedition.

"We should like to thank those of your readers who have pointed out the mistake, which has been corrected in later issues of the advertisement."

Demolition Industry Wages Board.

Decisions of the Demolition Industry Wages Board, made on October 23, relate, *inter alia*, to extension of increased lodging allowance; a special ruling regarding men directed to London for demolition work arising from enemy action, by which the term "workmen," wherever used in the special ruling, shall be taken to include foremen and charge-hands; lodging allowances while the workman is sick or disabled; Irish workmen and periodic leave; annual leave and lodging allowance; and a general wages increase. By the latter the following wages are current:—

London district (within 12 miles), 1s. 8¾d.; (12 to 15 miles) 1s. 8¼d.
A, 1s. 7¾d.; A1, 1s. 7¼d.; A2, 1s. 7d.; A3, 1s. 6¼d.
B, 1s. 6¾d.; B1, 1s. 5¾d.; B2, 1s. 5¼d.; B3, 1s. 5d.; C., 1s. 4¾d.

TOWN AND REGIONAL PLANNING

SOME BASIC REQUIREMENTS.

LECTURING recently at the Institution of Civil Engineers on "The Position of the Engineer in Relation to Town and Regional Planning: Traffic Problems," MR. W. S. CAMERON, M.Inst.C.E., P-P.T.P.I., City Engineer and Surveyor, Leeds, pointed out that the replanning of the road system was inseparable from the replanning of the use zoning of the town and region, and that it could be achieved only by the co-operation of the engineer, the economist, the industrialist, the architect, and the agriculturist.

Surface Utilisation Survey.

Before planning could be undertaken, he said, a comprehensive survey had to be carried out of the utilisation of the land. It should include full information about existing roads and the traffic carried, as well as information about waterways, airways, all types of public, residential, industrial and commercial buildings, and the position of open spaces. Other factors to be noted were density of houses, height of buildings, site coverage, and the age and condition of property.

The examination of the conditions in a town would probably bring out the need for drastic re-zoning to deal with such problems as traffic through the location of heavy industry in the oldest centres, leading to congestion due to increases of traffic to and from such industries. The remedy would probably be the improvement of the main radial and cross-traffic roads, with the separation of the opposing lanes of traffic and provision of service roads where necessary. The problem of light industries and the provision of suitable accommodation sufficiently near the industrial areas would also have to be examined, and would best be shown in an outline re-zoning plan. Sites for light industry might be provided in a trading estate, or, alternatively, by the local authority, and opportunity should be taken to provide a green belt round the industrial zone with playing fields and welfare buildings for the factory workers.

Neighbourhood Planning.

In the redevelopment of existing residential areas the problem of the intersection of countless parallel streets at right-angles to main traffic roads would have to be dealt with, as each one of them was a potential source of danger. In the absence of complete redevelopment in those areas as precincts in the long-term plan, it would be possible to intersect those minor roads by a service road into which the minor roads would be collected, or, alternatively, to stop up the minor roads by denying their access to the major roads by railings or posts.

Generally accepted principles in replanning a new town were based on neighbourhood units of populations not exceeding 10,000 persons. For them it would be necessary to decide which of the main traffic routes should be maintained and which could be diverted; how vehicular access to the main traffic roads could be limited to points not nearer than quarter mile apart; and how intersections could be planned so as to prevent opposing lines of traffic meeting.

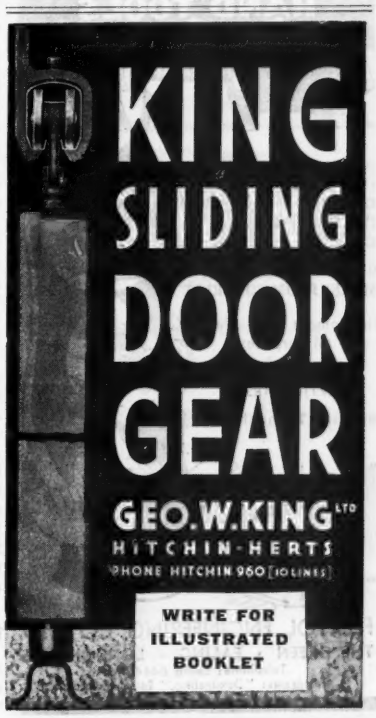
Replanning the Road System.

At that stage the outline redevelopment plan would have taken shape so far as the re-zoning was concerned, and it would be possible to prepare a classification of the road system based on predominant user under (a) arterial roads, by-passing arterial traffic having no need to enter the town; (b) sub-arterial roads, with traffic having its point of origin outside the town and its point of destination inside, or *vice versa;* (c) local through traffic; and (d) local traffic, within the precincts of the neighbourhood unit. An analysis of the figures of all vehicles from a traffic census would indicate where congestion had already risen and the causes. From observations made it could be taken that the maximum reasonable capacity for a free running unobstructed highway was 1,000 vehicles per hour per traffic lane of 11 ft. width. That would be reduced to about 500 vehicles per hour in the central business area of the town, and there would be a further reduction to from 300 to 400 vehicles per hour if the free flow of traffic were interfered with further by kerb-side standing vehicles. Based on the increase of traffic for the ten years preceding 1939, and assuming that a similar increase would occur after the war, then the traffic would more than double itself in twenty years, and allowances would have to be made for such increases.

The Pedestrian.

Similarly, the question of pedestrian traffic would have to be dealt with, and a census should be taken on all the streets and analysed. In central shopping areas a portion of the footpath had to be regarded as obstructed by shop-gazers, whilst other obstructions were caused by omnibus and tram stops and entrances to places of public resort. It would be found that as much as 3 ft. of the footpath had to be regarded as "dead width" in central shopping areas, but in other streets where the footpath was flanked by a verge, the "dead width" was about 1 ft. 6 in. As a result of observations, it had been found that if the number of pedestrians per 1-ft. strip (after deducting the "dead width") were less than 10 per minute, the capacity of the footway could be regarded as adequate. If the density were between 10 and 15 per minute, free passage became inconvenient, and if the density were higher the footway was unduly congested. In the replanning of existing town centres the question of a possible increase in pedestrian traffic from new buildings had to be borne in mind and allowed for.

The problems of the cyclist, the horse-drawn vehicle and public service passenger transport were also considered by the lecturer.



WAR DAMAGED HOUSES

M.O.H. PRIORITY FOR REBUILDING.

ACCORDING to a Circular (No. 158/44) issued by the Ministry of Health, the Government has decided that a very high priority shall be given to the rebuilding of houses which have been destroyed by the enemy, and which rank for a cost-of-works payment under the War Damage Act, and accordingly that authority should be given for such rebuilding to be begun in areas in which programmes of work under the general scheme of house repair are completed or are nearing completion, and when the local authority has ascertained from the local officer of the Ministry of Labour and National Service that local labour is likely to be available. For the present, the arrangements will be confined to houses which can be rebuilt at a cost not exceeding £1,500. Houses owned by local authorities and those privately owned will come within the scope of the scheme, but it is intended that local authorities should be consulted in regard to all proposals for the rebuilding of privately owned houses on the questions of both planning and priority. Steps must be taken to secure the maximum economy in materials and labour. It is suggested that local authorities should, so far as their own property is concerned, compile a list of houses in priority order which it is estimated can be rebuilt within the limit of £1,500, and that they should plan for work to be commenced on a certain number of these houses within the next six months. Local authorities should verify from the War Damage Commission that any house proposed to be rebuilt is subject to a cost-of-works payment, and should inform the Commission if it is proposed to make any alterations or additions to the house as it was before damage, other than those of a minor character which are not likely to increase the cost of making good. Reference should also be made to the planning authority to ascertain that there is no objection from a planning angle to any rebuilding proposals.

All rebuilding proposals in respect of local authorities' own houses should be referred to the Senior Regional Officer, to whom also applications for the necessary quantities of controlled materials (timber, iron and steel) should be sent. The authorisations for these materials for local authorities' own houses will be issued by the Priority Officer of the Ministry.

Private owners who wish to rebuild their own totally destroyed houses should submit applications for a building licence to the Regional Licensing Officer, who will, in accordance with the procedure described in Circulars 2871, 9/44 and 49/44, refer such applications to the local authority for their views. Authorisations for controlled materials in such cases will be issued by the Regional Licensing Officer. The cost of rebuilding war-damaged houses will be recoverable from the War Damage Commission in the usual way.

Building Technicians' Diary.

The 1945 issue of the Diary, the 24th annual edition, is fully up to the useful and informative standard of its predecessors. In addition to standard data, a summary is included of legislation as it affects constructors and planners. Price 3s. 11d. post free, the Diary is published by the Association of Building Technicians, 5, Ashley-place, S.W.1.

IN PARLIAMENT

Town and Country Planning.

THE Town and Country Planning Bill has passed through its final stages in the House of Lords. Three days were taken up with the consideration of the Bill in Committee, and a number of amendments were made. One of the most important of these was on Clause 2, which gives the power to purchase land for the redevelopment of areas extensively war damaged or needed for relocation of population and industries of such areas. LORD ADDISON moved that the period within which a local authority may apply for an order to purchase land should be five years, and not two years, as provided in the Bill. He said that two years was too short a period.

THE LORD CHANCELLOR at first resisted the amendment, but later, LORD WOOLTON, the Minister of Reconstruction, accepted a period of three years, and this was agreed to.

There was a long discussion of what has become known as the "Plymouth Plan," but the Government took a similar view to the one they took in the Commons. LORD WOOLTON said that the Minister of Health, after long consultation with his colleagues, decided that the question of the alteration of boundaries was an issue which they ought not to face in a patchwork manner. It was surely a good thing that there should be national planning of boundaries. The Government were anxious that the blitzed cities should be replaced and that there should be no delay. He had seen the promised White Paper on local government. The Minister of Health and his colleagues in the Cabinet were anxious that it should be published this year. The Minister was also anxious that legislation should be forthcoming as soon as possible. When the Boundary Commission was formed it was intended that the particular blitzed cities should have precedence, and the Commission should be instructed to deal with them first. It was desirable to deal with local government as a whole. The amount of delay occasioned was very small.

This assurance satisfied Lord Astor, who had opened the discussion on this matter.

Building Industry Controls.

MR. CRAVEN-ELLIS asked the Parliamentary Secretary to the Ministry of Works whether he would give favourable consideration to withdrawing all controls affecting the building industry and introducing price control of all building materials until such time as these supplies had been built up and were able to meet all demands.

MR. HICKS said that so long as there was a shortage of building labour it was necessary to retain a control of the building industry in order that the available capacity might be used where the national interest required. The prices of the more important building materials were already controlled either statutorily or by means of voluntary arrangements with the industries concerned.

Labour Costs.

SIR WALDRON SMITHERS asked the Parliamentary Secretary to the Ministry of Works whether, as in 1914, the cost of labour was 25 per cent. of the total cost of a house and had now risen to 65 per cent. and as in the experience of builders a good bonus led to a preponderance of absenteeism, he would withdraw the bonus under the Essential Work Order.

MR. HICKS said that at present if the work was carried out under the Essential Work Order and the Uniformity Agreement, the labour cost was estimated at approximately 37 of the total cost of building a house. This compared with 32 in 1939. The question of bonusing in the building industry in the post-war period must in the future as in the past be a matter for negotiation within the building industry itself.

"THE BUILDER"
PRICES AND WAGES

Until further notice and in order to devote more space to news, *The Builder* copyright "Prices Current of Materials" and Rates of Wages will be given in the first issue of each month only. Current changes will be given weekly as they occur.

Apprentices.

SIR IRVING ALBERY asked the Minister of Labour if building trade apprentices were being recalled from the Services.

MR. BEVIN: No, sir.

Methods of Construction.

REAR-ADMIRAL BEAMISH asked the Minister of Health if his attention had been drawn to the plans and proposals of the borough surveyor of Hove, whereby permanent ground floors for housing accommodation might be built with temporary prefabricated first floors, with a view to meeting the housing shortage; and whether his Department was prepared to make use of this system.

MR. WILLINK said that proposals similar in principle had been considered by the Burt Committee, which had reached the conclusion that the methods suggested did not secure the advantage claimed.

Northolt Houses.

MISS WARD asked the Minister of Health whether, to give equal opportunities to view to future housewives in all parts of the country, he would take steps to see that the houses erected at Northolt were erected in the North of England as well as Coventry and Birmingham.

MR. WILLINK said that the houses at Northolt were built by the Minister of Works to demonstrate various methods of construction and house plans and to investigate costs. The Minister of Works could not undertake to repeat that demonstration. The experimental houses at Coventry and Birmingham were, in fact, of a different type, and he was prepared to consider applications from local authorities to erect experimental houses if they so desired.

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BUILDING APPRENTICESHIP

IN a Circular (159/44) the Ministry of Health draw the attention of County Councils and Housing Authorities to a scheme for the training of apprentices on special building works.

The Circular states that in connection with plans for the early commencement of essential building work, the Government have had under consideration the steps to be taken to effect as rapidly as possible an increase in the number of craftsmen in the building industry. The provision of training facilities for apprentices is vitally necessary for this purpose, and to meet the present difficulty experienced by the trade in providing these facilities a special scheme for the training of apprentices has been devised. This scheme (designed as a temporary measure to meet present conditions and described in detail in a memorandum) has been drawn up by the Ministry of Works and the Ministry of Labour and National Service in consultation with the Ministry of Health. The scheme contemplates that building works for local authorities may be executed by apprentices under craft instructors employed by an "apprentice master" who enters into a contract with the local authority.

In those districts where local authority houses have been destroyed by enemy action, the reinstatement of these houses will be the most suitable building work to be undertaken under the scheme. This work should be given first priority, followed by the rebuilding of other destroyed property belonging to the local authority. In those districts where enemy action has not caused destruction to local authority property, proposals for the erection of new suitable buildings for the authority will be entertained.

The Apprenticeship Committee (which is a Joint Committee of Building Trade Employers and Operatives) will initiate proceedings for the operation of the scheme in their area, and will approach the local authority at the appropriate stage for their consent to the application of the scheme to suitable work.

The Ministry of Works will inform the local authority concerned when the application of the scheme to a particular proposal has been approved, and that Department will communicate direct with the local authority in regard to the arrangements for meeting costs.

The success of the scheme (concludes the Memorandum) will depend very much upon the ready co-operation of local authorities. The Minister of Health is confident that this will be forthcoming, inasmuch as the rapid improvement in the building labour position is so essential to house building programmes which local authorities have drawn up. Local authorities who are willing to co-operate may feel able to earmark in advance particular proposals to which the scheme might be applied.

Housing in Scotland.

A report, "Distribution of New Houses in Scotland," has been issued (Stationery Office, 2s.) by the Scottish Housing Advisory Committee.

THE SCOTTISH BUILDER

NEW BUILDINGS

GLASGOW.—Corporation propose school at Linburn-rd. and Moorpark-av., for which the architect is John MacNab, 129, Bath-st., Glasgow.—Alterations and additions to be carried out at the Tabernacle, Shettleston-rd., for which the architects are Will J. B. Wright & Kirkwood, Carlton House, Blythswood-sq., Glasgow.

GLASGOW.—Alterations and extensions to be carried out to the offices of A. W. Memphill, for which the architects are M. Simpson & Co., 62, Vicarfield-st., Glasgow.—Plans prepared for office buildings, etc., by Thomas Caskie, 8, Circus-pl., Glasgow.

FUTURE CONSTRUCTION

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications: the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

NOVEMBER 22.

Beckenham T.C.—Erection of prefabricated concrete canteen kitchen and brick boiler house at Marian Vian School. J. Dove, A.M.Inst.C.E., B.E. Dep. £2.

NOVEMBER 24.

Lincoln T.C.—Extensions at City Maternity Home, Goldsmith-walk. City E., Silver-st. Dep. £1 1s.

NOVEMBER 27.

Cheshire C.C.—Additions and alterations at nurses' home, Warford Lodge, E. M. Parkes, County A., The Castle, Chester. Dep. £2 2s.

Huddersfield T.C.—For builders', joiners', plumbers' and glaziers' and painters' work (separate trades) for erection of central kitchen and boiler house at Woodhouse Hall, Sheepridge. Ed. Architect, Ed. Offices, Peel-st., Huddersfield.

DECEMBER 7.

Cheltenham T.C.—Erection of 4 experimental houses at Kipling-rd., St. Mark's. G. G. Marsland, B.E. Dep. £2 2s.

NO DATE.

Linlithgow T.C.—For completion of 20 partially built houses at Captain's Park. Names to N. S. Main, T.C. Plans to be seen at the office of Johnson and Bennet, architects, 100, High-st.

West Riding C.C.—For provision and erection of new four-bay Dutch barn, cartshed and granary at Park Farm. W. P. Richardson, County Land Agent, County Hall, Wakefield.

PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

DECEMBER 11.

***Beckenham T.C.**—Steam, hot and cold water services and heating services at canteen kitchen and boiler house at Marian Vian school. J. Dove, A.M.Inst.C.E., B.E. Dep. £2.

ROADS, SEWERAGE AND WATER WORKS

NOVEMBER 25.

†**Thurrock U.D.C.**—Construction of concrete roads and sewers. G. F. Andrassy, M.Inst.M. &Cy.E., E. and S. Dep. £2 2s.

NOVEMBER 27.

Melton and Belvoir R.D.C.—For laying approx. 2,000 yds. of 4 in. and 3 in. dia. water main. Council Offices, 10, High-st., Melton Mowbray.

NOVEMBER 28.

†**Lanark C.C.**—Construction of roads and sewers, etc. S. M'Call, County Housing Architect and Engineer, 29, Clydesdale-st., Hamilton.

DECEMBER 2.

South-West Lancashire Group.—Construction of roads and sewers. City E. and S., Municipal-bldgs., Dale-st., Liverpool, 2. Dep. £2 2s.

DECEMBER 7.

Swansea C.B.—Construction of roads and sewers. J. B. Bennett, A.M.Inst.C.E., B.E. and S. Dep. £2 2s.

NO DATE.

Louth R.D.C.—Supply and laying of approx. 2,500 lin. yds. of 3 in. dia. spun-iron pipes, etc. J. H. Haiste, M.Inst.C.E., 22, Queen-sq., Woodhouse-la., Leeds 2. Dep. £2 2s.

PUBLIC APPOINTMENTS

NOVEMBER 28.

***Down C.C.**—(1) Assistant Planning Officer. £450 p.a., plus bonus; (2) Draughtsman, £250 p.a., plus bonus. J. H. Harvey, Secretary to C.C., Courthouse, Downpatrick, N.I.

DECEMBER 21.

***Shropshire C.C.**—County Planning Officer. £800-£25-£900 p.a., plus £33 16s. bonus. Application forms from County S., County-bldgs., Shrewsbury.

GENERAL BUILDING WORK

Ashton-under-Lyne.—T.C. propose 120 houses at Reyner-la. and 32 at Charlestown.—T.C. approved alterations for Carlson Foundries, Ltd.

Aspull.—U.D.C. propose housing scheme at Finger Post site.

Birmingham.—University Senate propose extensions to University buildings. Plans by Verner O. Rees (F.), 51, Queen Caroline-st., Hammersmith, W.6.

Blackpool.—Canon F. B. Freshwater, vicar, and Parochial Council of Church of St. Stephen's-on-the-Cliffs, North Promenade, to erect columbarium.

Bolton.—T.C. propose: Layout plans for development of land at Breightmet; garage at Central Police Station, for Watch Committee.—T.C. approved: Additions for Dart Mill, Ltd.

Chapel-en-le-Frith.—R.D.C. propose houses at Ashbourne-la.

Cheshire.—E.C. propose elementary school at Bramhall.

Coventry.—Electricity Departmental Social Club propose adaptation of Drill Hall at Longford for social club.—T.C. propose conversion of police huts at Canley for community centre; erection of buildings and installing concentrator plant for servicing of kitchen waste, at £6,880.

Darlaston.—Staffs E.C. propose additions at Wedgwood Memorial College, at £2,450.

Derbyshire.—C.C. propose conversion of "Dale Bank," Cobden-rd., Chesterfield, into children's receiving home, and "The Cedars," Hill Top, Beardsall, into a girls' remand home.

Durham.—Temporary accommodation to be provided by County E.C. at Jarrow Secondary school.

Eccles.—T.C. to acquire 37 acres at Ellesmere Park for housing site; approved additions for G. Holt & Co. (1928 Eccles), Ltd.

Heywood.—T.C. approved alterations and additions at "Starkey Arms" hotel, for Cornbrook Brewery Co., Ltd., Ellesmere-st., Hulme, Manchester 15. Plans by E. A. Newton (A.), Rutherford-chbrs., Bow-la., Princess-st., Manchester 2.

Howden.—British Legion members propose extensions and sanitary conveniences at club premises.

Hull.—H. Needlet, builder, Dunstan-rd., proposes erection of houses. Plans by G. Williams (F.), Ferres-chbrs., Whitefriargate.

Lancaster.—R.D.C. propose housing sites at Slyne, Yealand Conyers and Yealand Redmayne.

Leicester and Rutland.—Youth Hostels Association, Welwyn Garden City, propose adaptation of property at Loddington for Youth Hostel.

Manchester.—E.C. propose to adapt "Holly Royde," Palatine-rd., West Didsbury, for adult residential college, at £3,000.

Mansfield.—Maun Industries, Ltd., propose extensions to works to plans by W. Richardson White; G. E. Veville & Sons, Ltd., propose works.—T.C. propose development of land at Bancroft-la. for housing site; erection of ladies' conveniences at Bath-la., at £250-£300.

Morecambe and Heysham.—Edmondson Bros. (Morecambe), Ltd., Main-st. Saw Mills, propose development of Burlington-av. estate for houses.

Newcastle-on-Tyne.—City Council to rebuild premises at St. Thomas-sq. Plans by City Property S.

Northwich.—Members of Northwich Victoria Football Club propose rebuilding stands, etc.

Oldham.—T.C. approved additions for Granville Mill Co., Ltd., cotton spinners, Derker.

Oldham.—R.C. Authorities propose Catholic Church at Fitton Hill.

Ormskirk.—U.D.C. propose houses at Burscough.

Rochdale.—Watch Committee propose police buildings and police houses at Norden, at £2,300.—T.C. propose extensions at central library and provision of branch libraries.

Rothwell, Yorks.—Housing Committee propose 313 houses on various sites; extension at welfare central clinic; provision of health clinic at Stourton.

Shrewsbury.—T.C. propose 170 houses at Racecourse recreation ground, Crowmoor, and 50 at Harlescott recreation ground.

Stretford.—T.C. approved reinstatement of Trafford Park Hotel, Ashburton-rd., for Cornbrook Brewery Co., Ltd., Ellesmere-st., Hulme, Manchester 15. Plans by E. A. Newton (A.), Rutherford-chbrs., Bow-la., Princess-st., Manchester 2.

Stockport.—T.C. approved: Prefabricated building for classrooms, etc., at Pendlebury Orphanage, Old-rd., Heaton Norris; 5-storey block of shops and office accommodation, Chestergate, for Hurstead Estates, Ltd.; adaptation of Mellor's Mill, Ratcliffe, for workshop, offices, etc., for Moore & Ratcliffe, 144, Bramhall-la.—T.C. approved layout for 1,110 houses, shops, community centre, cinema, library, etc., at Brinnington estate; alterations at Museum, Vernon Park, for laboratory and lecture room for Parks Committee.

Sunderland.—J. Potts & Son, St. John-st., Sunderland, are architects for erection of store, for H. Marsh & Son.

Tyldesley.—U.D.C. propose 64 houses at Mosley Common, Ellenbrook, and development of site for houses at Astley.

Wakefield.—E.C. propose extensions to workshops at Technical College, Newstead-rd.

Wallasey.—E.C. propose temporary school at Gorsey-la.

Wallsend.—Plans approved by T.C. for erection of offices and employees' wash-places at The Quay, for R. D. Lambie.

Wigan.—T.C. propose 1,500 houses.

Wigston.—Branch of British Legion acquired property and grounds of "The Elms," Wigston Magna, for conversion into branch headquarters and club premises.

Worksop.—R.D.C. propose 75 houses.

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BRITISH RESTAURANTS AND CANTEENS

Bangor (N. Wales).—Caernarvonshire E.C. propose kitchen at R.C. schools, Westbury. Plans by Ll. Jones (L.), County A., County Offices, Shirehall-st., Caernarvon.

Bolton.—E.C. propose central kitchen at Tonge Moor. Plans by C. Herbert, B.E.

Kendal.—Board of Management of Westmorland County Hospital propose extensions to kitchen block. Plans by Malcolm G. Shaw (L.), 45, Highgate.

Lincs (Holland Division).—E.C. propose kitchen at Gleed Senior school and Spalding High school for Girls.

Oldham. — E.C. propose adaptation of Alhambra Picture Hall for dining centre for St. Mary's R.C. school.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Ashton-under-Lyne. — Exterior painting of houses and flats at Hurst Knoll estate, for Housing Committee. J. Lowe, Housing Manager, 63, Warrington-st.: *A. Sharrocks, 229, Spotland-rd., Rochdale.

Brighouse.—Adaptation of Brook House, Atlas Mill-la., for school clinic, for T.C. H. A. Sneezum, B.E.: *H. Bottomley & Son, 117, Halifax-rd., Brighouse.

Burton-on-Trent.—Construction of roads and sewers for advance preparation of housing sites at Waterside, for T.C. G. Moncur, B.S.: *Geo. Walker & Slater, Ltd., Uttoxeter Old-rd., Derby.

Cambridge.—Construction of approximately 2,250 lin. yds. of carriageway, soil sewers, surface water drains, etc., for advance preparation of housing sites at Cambridge and Godmanchester, for Cambridge group of local authorities: *E. H. Burgess, Ltd., 34, Grosvenor-gdns., London, S.W.1, £23,700.

Denbighshire.—Alterations and additions to police buildings at Chirk, for Standing Joint Committee. G. D. Wiles (L.), County Architect, Acton Hall, Wrexham: *Francis Roberts & Son, Trevor, Ruabon, Denbighshire, £340.

Durham.—Works for C.C.: Erection of Dutch barn at Lizards Farm: *A. J. Main & Co., Glasgow, £404; reconstruction of Dutch barn at Houghall Farm: *A. J. Main & Co., Glasgow, £422.

Hereford.—Public lavatories at Market Tavern, for T.C.: *South Western Plumbing and Painting Co., Ltd., 66, St. Martin's-st., Hereford.

Liverpool.—Erection of prefabricated building and conversion of science block at Lander-rd. school, Litherland, for additional accommodation, for Lancashire E.C. A. T. Nicholson (F.), County A., County-bldgs., Fishergate-hill, Preston: *John Lucas & Son (Builders), Ltd., Eccleston-st., Prescot, £1,391.

Lancashire.—Buildings: *R. W. Gregson, Milk-st., Tyldesley, nr. Manchester.

¶**London (Air Ministry).**—List of new contracts to value of £500 or over for week ended November 11:—

Tree-felling work: Langshaw Rowland, Wrexham.

Well-boring work: Duke & Ockenden, Ltd., London, S.W.1.

Installation work: Simmons & Hawker, London, S.W.18.

Surface dressing work: Limmer & Trinidad Lake Asphalte Co., Ltd., London, S.W.1.

Surfacing work: G. Gregg & Sons, Ltd., Larne, N. Ireland.

Building work: P. J. Walls & Bros., Belfast.

Civil engineering work: Collen Bros., Ltd., Portadown, N. Ireland.

Heating and hot-water work: Z. D. Berry & Sons, Ltd., Warrington, Lancs.

Agricultural work: Pipewell Ploughing Co., Ltd., Kettering.

¶**London (Ministry of Works).**—Works contracts placed by M.O.W. during week ending November 9:—

Cambs: Building work, John Brignell, 42, Newmarket-rd., Cambridge.

Carmarthenshire: Building work, Isaac Jones, Temple-st. Joinery Works, Llanelly.

Northern Ireland: Building work, H. & J. Martin, Ltd., 163, Ormeau-rd., Belfast.

Lancs: Building work, Water Peak, 17, Church-st., Warrington.

Yorks: Building work, A. Askam & Son, Ackworth-rd., Pontefract; Norman Thompson, Ltd., Stonehouse-st., Linthorpe, Middlesbrough.

¶**London (War Dept.).**—Works contracts placed by War Dept. for week ended November 4:—

Ches: Miscellaneous work, Morton Browne, Ltd., Chester.

Notts: Heating work, Bennie Combustion, Ltd., Little Hulton, Lancs.

Oxfordshire: Miscellaneous work, W. Norman & Son, Ltd., Erith, Kent.

London: Miscellaneous work, C. P. Roberts & Co., Ltd., London, W.C.1.

Berks: Miscellaneous work, Patching & Co., Worthing Sussex.

Wilts: Miscellaneous work, C. H. Pearce & Son, Westbury-on-Trym, Bristol.

Manchester.—Additions, for H. Waddington: *Starkey & Walker, Ltd., 4, Albert-sq., Manchester 2; additions for W. Loftus: *T. Costello, Ltd., 45, Clifton-rd., Heaton Moor, Stockport; additions for H. Duffin: *G. Wright, 83, Old-rd., Blackley, Manchester 9.

Middlesbrough.—Internal painting at Newport-rd. and St. John's C.E. schools, for E.C.: *P. Roe, Middlesbrough, £1,750.

Oldham.—Alterations to cooling towers, for T.C.: *Davenport Engineering Co., Ltd., Harris-st., Bradford.

Sheffield.—Works for T.C. W. George Davies City A.: Erection of cooling tower at generating station: *Mitchell Engineering, Ltd., 43, Bedford-sq., London, W.C.1, £69,448; erection of garage at Duchess-rd.: *D. O'Neill & Son, Solly-st., Sheffield 1, £4,750; erection of prefabricated buildings as extensions to Beck-rd. and Shirecliffe schools: *M. J. Gleeson, Ltd., 822, Chesterfield-rd., Woodseats, Sheffield 8, £978 and £1,008; construction of roads and sewers for advance preparation of housing sites: *Sir Lindsay Parkinson & Co., Ltd., 171, Shaftesbury-av., W.1, £323,000.

Stockport.—Construction of roads and sewers for advance preparation of housing sites. W. F. Gardner, B.S.: *W. H. Worthington, Ltd., 61, Rusholme-rd., Chorlton-upon-Medlock, Manchester, £35,921.

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